FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

APRIL, 1956

Valley City, N. D., firemen use water fog to protect exposures. See page 124

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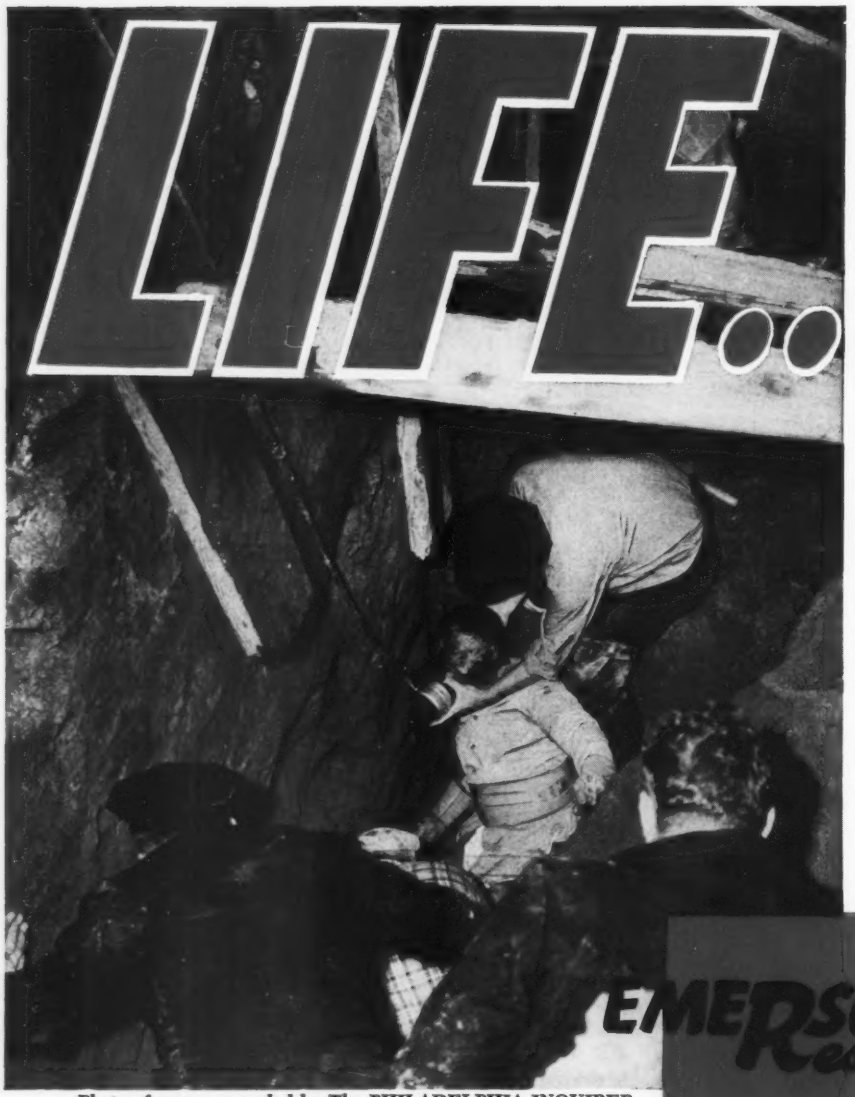
Fundamentals of Rural Fire Protection
Eleven Lives Lost at Church Supper Fire
Operation F. D. I. C.—Like Topsy, It Just Grew!



LINE

to a victim
in a cave-in

. . . or in a
collapsed
building or
mine shaft

. . . trapped
by machinery
or under an
overturned
vehicle . . .

in a tank or
the hold of
a ship . . .

EMERSON Resuscitator

Photo of rescue recorded by The PHILADELPHIA INQUIRER

From hundreds of feet away **EMERSON EXTENSION HOSES** can bring the breath of life to trapped victims, saving lives you could not reach with bulkier equipment. They connect instantly to standard Emerson models, and add new life-saving power to the equipment you already have. Ask your Emerson representative, or drop us a line at the factory.

Emersons are **SIMPLE** to operate and **SAFE** for adults, children, or infants. They are **ACCEPTED** by the American Medical Association (since 1942) for use **BY LAYMEN.** They **PROVIDE SUCTION,** alternating with the pressure phase, to give vital aid to the circulation.

"Simplest and Safest"

J. H. EMERSON COMPANY

32 COTTAGE PARK AVENUE, CAMBRIDGE 40, MASSACHUSETTS

HOW'S YOUR HEARING?

FEDERAL *THUNDERBOLT*

Don't think that you're going deaf because your siren doesn't sound as loud as it used to! Don't think your siren is getting weaker because it is older.

If your siren **doesn't** seem as loud or **doesn't** cover the area it did in the years gone by, chances are it's **neither** your **ears** nor the **siren.** Despite its age, your siren is probably kicking out as much sound as it ever did; but natural and man-made obstructions have been reducing its sound distribution, trees and other vegetation have increased in size and quantity; more and larger buildings have been erected and the limits of your town have spread out considerably. Your one siren — once adequate — is attempting a task beyond its capacity! It can't do the job single-handed. Give it assistance with additional sirens in congested or outlying areas. Replacement alone won't solve your problem. To do today's job with one siren requires many times more power — a super siren such as the FEDERAL Thunderbolt. Write for catalog 200.

FEDERAL *STL-10*

FEDERAL SIGN and SIGNAL Corporation

[illegible] S. State Street, Chicago 16, Illinois

FIRE ENGINEERING

VOL. 109 APRIL, 1956 NO. 4

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"OWED" TO THE VOLUNTEERS

There are more than 20,000 fire departments in the United States. Of these, less than 2,000 are full-paid organizations. The balance are volunteer.

Over ten times as many volunteer as there are full-paid professional departments!

Sheer numbers alone do not make for good fire fighting. But neither does a regular pay envelope.

In their devotion to the business of fire suppression, their love of the job, their enthusiasm, their sacrifices, no one can question the volunteer fire fighting services.

Nor need the volunteers take a back seat when it comes to enterprise in acquiring the newest, best, most scientific ways and means to fight fire.

Many of the nation's smartest improvements in fire control technique—yes, and in equipment to buttress that technique—have developed in the volunteer services. Many a volunteer fire station and its apparatus and equipment is the envy of professional, full-paid fire fighters.

Through the years, FIRE ENGINEERING has told the story of the volunteer service—pictured and described its progress. This issue, which is devoted largely to rural and small town fire departments is an example.

The Publishers

FIRE ENGINEERING—A CONSOLIDATION OF FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION AND FIRE SERVICE

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FRED SHEPPERD
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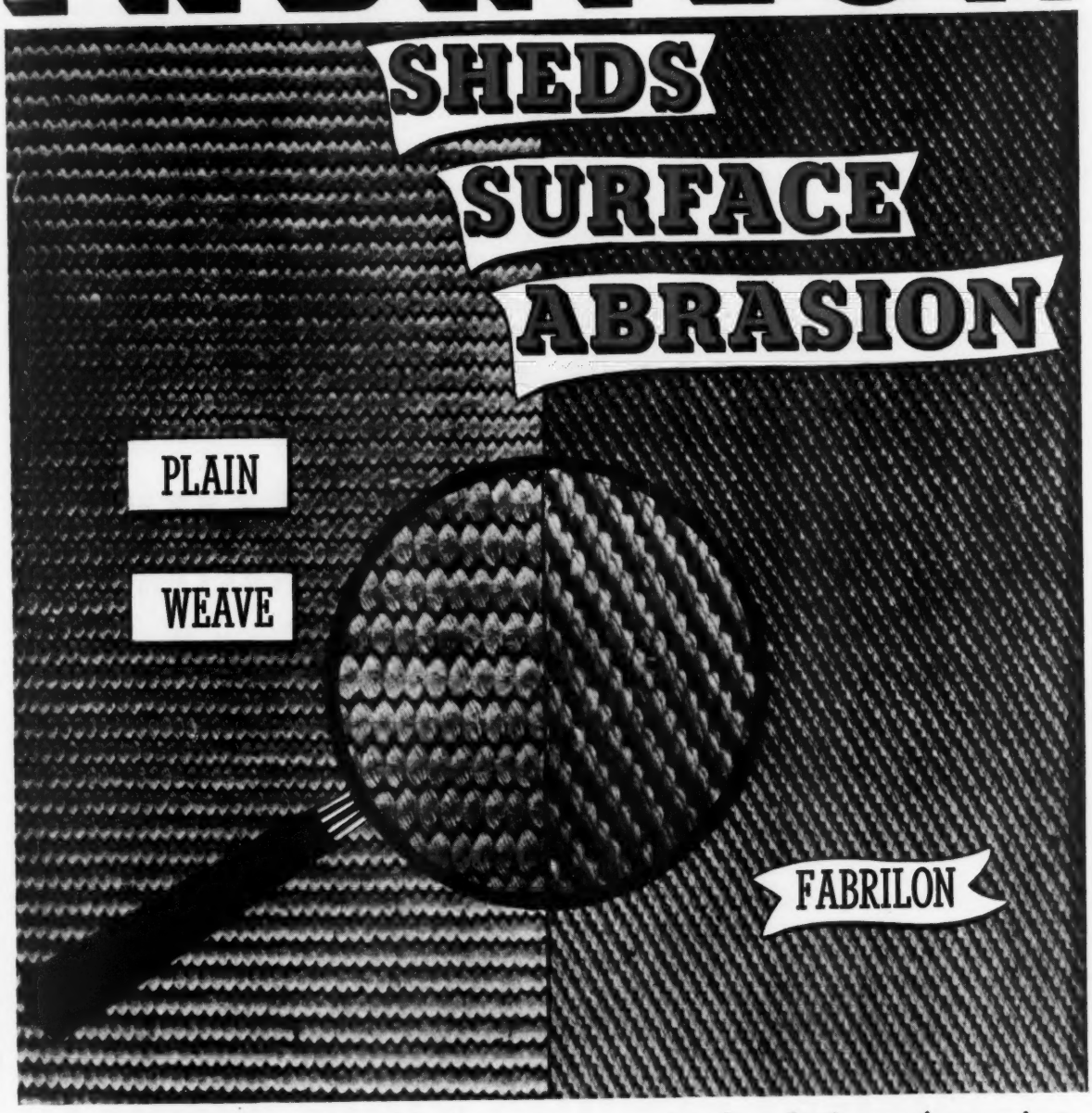
FABRILON

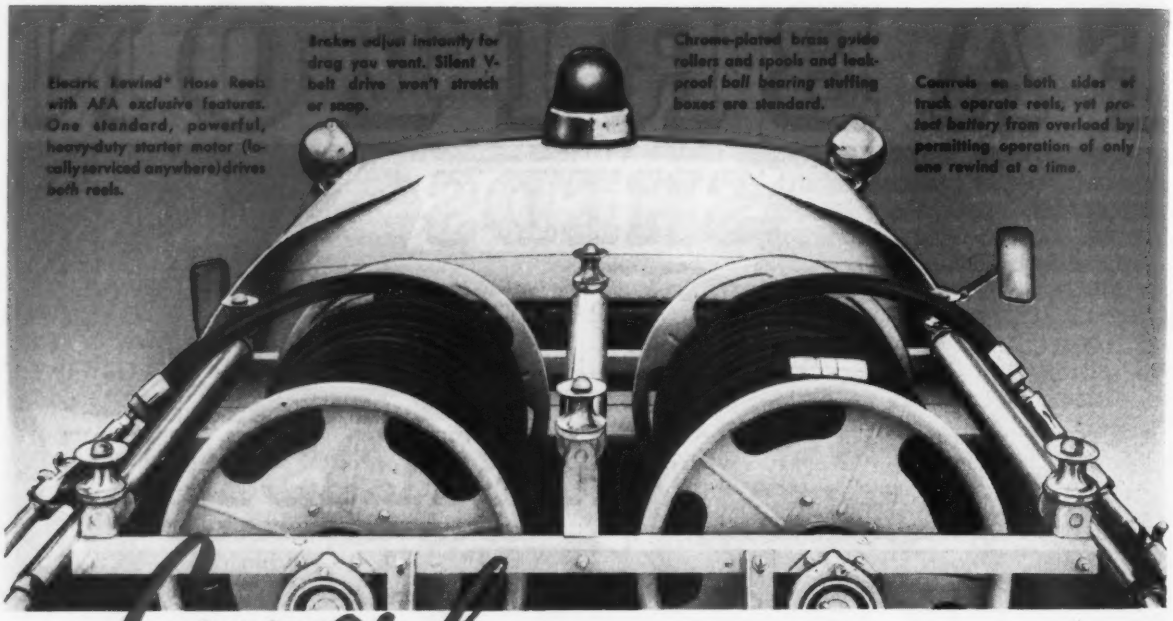


In FABRILON the remarkably fine weave presents a *long lasting surface* against abrasion, snagging and other types of service wear. The closely woven *diagonal or twill* stitch passes along surface friction like the runners of a sled. This means *less wear and drag* when the hose is pulled over the ground or around obstacles. It also means *smooth texture, ease of handling* and *efficient loading* in the hose bed.

FABRIC FIRE HOSE COMPANY

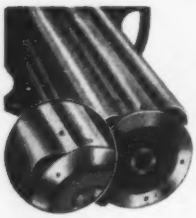
THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

SANDY HOOK CONNECTICUT

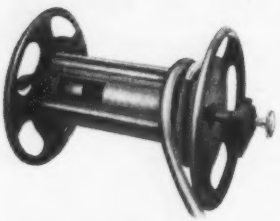

Electric Rewind* Hose Reels with AFA exclusive features. One standard, powerful, heavy-duty starter motor (locally serviced anywhere) drives both reels.
Brakes adjust instantly for drag you want. Silent V-belt drive won't stretch or snap.
Chrome-plated brass guide rollers and spools and leak-proof ball bearing stuffing boxes are standard.
Controls on both sides of truck operate reels, yet protect battery from overload by permitting operation of only one rewind at a time.

Superb HOSE REEL FEATURES AGAIN PROVE THE ENGINEERING EXCELLENCE OF American Fire Trucks

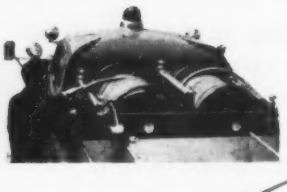
Two hose reels are supplied as standard equipment on every American Fire Truck



Inset on reel shows superior AFA construction. Collapsible, *self-adjusting* spring steel drum louvers flatten when pressure expands hose. Design prevents damage to hose and couplings—*increases* hose life.



Special convex reel wheels with *wide* rolled edges protect hose. Hose comes *straight* from coupling — *not* sharply bent — thus lasts longer. This is AFA *engineered excellence!*



Hand crank rewind* equipment includes top-quality reels, same fine design as other models.

*Optional features at extra cost.

From bumper to rear step, American Fire Trucks are packed with engineered features that firemen like! Examine these fine AFA-built hose reels, for example. See how every detail helps give you faster operation, smoother performance and greater convenience than any other reel built!

As pioneer builders of the first successful electric rewind hose reel, American has continued developing, improving and action-testing to increase the useful benefits these units afford you at any fire.

In line with our policy of offering a choice of chassis, choice of midship or front-mounted pump—and other features to suit *your* community's needs—you can choose these hose reels with electric, hand-crank, or hand-operated rewinds.

Why not get full details?

Contact your nearest American representative soon!

American FIRE APPARATUS CO.

Main Office: Main Street Road, Battle Creek, Mich. • Plants at: BATTLE CREEK, MICH. • MARSHALLTOWN, IA.

B.F.Goodrich

Now B. F. Goodrich hose has 10 times more mildew resistance

HERE'S the new fire hose that's 10 times more resistant to mildew attack and rotting. It's B. F. Goodrich Flexseal, protected with the exclusive Superseal treatment.

Unlike ordinary treatments that just coat the surface of hose, the Superseal solution penetrates every cord in both the inner and outer jacket. This special chemical treatment also protects against moisture absorption and freezing, increases the hose's resistance to fire.

However, this added protection is just one reason why the Maple Heights, Ohio, Fire Department equipped their two new pumpers with B. F. Goodrich hose. With Flexseal, they get a hose that's 23% lighter, 50% stronger, much more flexible than ordinary hose. Trucks can carry a third more hose, and it cuts minutes from loading time because it racks naturally on the truck bed, doesn't kink or twist.

And most important—with all these improvements, B. F. Goodrich Flexseal costs no more than ordinary treated hose. There's a B. F. Goodrich fire hose distributor near you, ready to bring this and other B. F. Goodrich hose improvements to your department. Give him a call or write *The B. F. Goodrich Company, Dept. M-612, Akron 18, Ohio.*

B.F.Goodrich

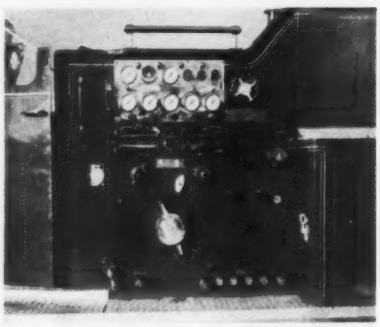
INDUSTRIAL PRODUCTS DIVISION

BOYER

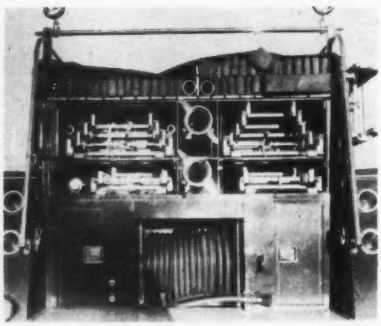
Custom Built Fire Trucks By UNIVERSAL

A "QUAD" Combination Ladder and Pumper Delivered To SYCAMORE, ILLINOIS

FEATURES: Waukesha 145-GK (270 BHP) Fire Fighting Engine, Dual Batteries, Power Steering, Electric Road Sanders, Radiator Shutters, Four Compartments Each Side and Two In Rear, and Many Other Features.



HALE "The Best" 1000 GPM ZMF Pump, 400 Gal. Booster Tank, With All Controls and Gauges On Operator's Panel.



A Total of 240 Ft. of Ladders Which Do Not Extend Out Any Further Than Hose Bed. Capacity of Hose is 1400′ of 2½ and 300′ of 1½.

UNIVERSAL FIRE APPARATUS CORP.

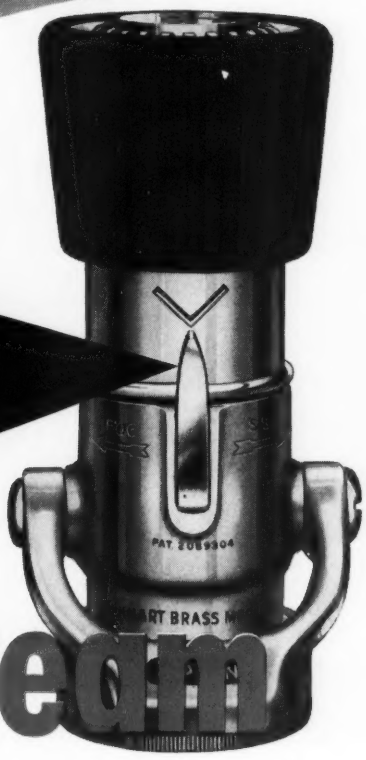
Successor to Boyer Fire Apparatus Co.

LOGANSPORT **INDIANA**

WIDELY IMITATED!

NEVER EQUALLED!

THE BEST!



Select-O-Stream

MYSTERY NOZZLE

Developed in 1952 . . . an immediate success, SELECT-O-STREAM proved to be one of the greatest *original* developments in Elkhart's long list of fire fighting "firsts." It's a great compliment to be copied. It's stimulating to know YOU'RE RIGHT and YOU'RE FIRST. Admirably referred to as SOS, Select-O-Stream has been one of the most talked of nozzles in the history of fire fighting. Accept this sincere request: TRY, TEST, COMPARE Select-O-Stream. YOU DECIDE!

★

Set to any stream without looking. You feel those embossed stream indicators.

★

Set to turn on in any position.

★

Locks to the stream you choose.

★

Separate ball type shut-off. (Brass to neoprene seat)

★

Improved grip serves as both grip and bumper.

★

Teeth that chew the fog stream. (When you set the nozzle to fog these teeth go to work.)

★

Solid knurled base — easily attached.

★

NOW AVAILABLE IN THESE SIZES: 1"—1½"—2½".

Write for complete literature

ELKHART BRASS MFG. CO., INC.

ELKHART, INDIANA

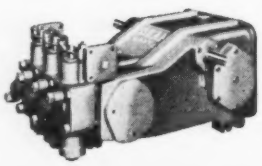
Past half a century of fire fighting progress

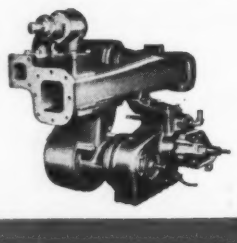
Only the JOHN BEAN HPV* FIRE-FIGHTER has all these features

*HPV — the two-fisted fire-fighter with both High Pressure Fog and Volume pumps (plus John Bean High-Pressure Sno-Foam at low extra cost).

TRUE HIGH-PRESSURE AND MULTI-STAGE PUMPS OPERATE SIMULTANEOUSLY

Operate them together or singly — the John Bean High-Pressure Fog piston pump, delivering 60 GPM at 850 PSI pump pressure — and the John Bean centrifugal volume pump, providing a smooth flow at 500, 600 or 750 GPM.





DUAL BATTERY SYSTEM
Auxilliary battery insures against starting failures.

VACUUM-OPERATED PUMP SHIFT
Quick, positive, trouble-free shifting of volume pump.

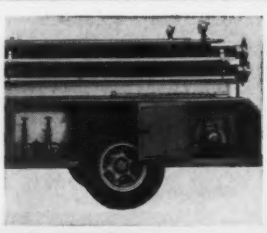
THE PATENTED JOHN BEAN FIRE-FIGHTER GUN

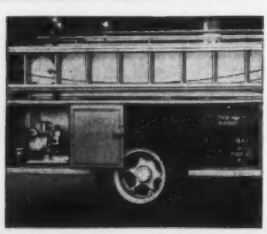
The fireman has perfect control of stream patterns with this famous gun. Instant on-and-off control of discharge with one hand — other hand rotates barrel for a complete range of fog patterns. Face-protector spray allows fast, close approach to hot fires. Hose extending from back of gun provides straight-flow waterway for best performance and easiest handling.

STANDARD TRUCK CHASSI

OVER 45 CUBIC FEET OF WEATHERPROOF STORAGE SPACE

Four lighted compartments are built in — one tailored for slide-mounted generating equipment; another for portable water pump. Plus a rear compartment for smaller fire department fire accessory tools.





This two-fisted fire-fighter stops fires faster!

The "HPV" gives you two lines of fast-striking John Bean High-Pressure Fog . . . the *original* high-pressure fog . . . discharged from the guns at 600 to 700 PSI nozzle pressure. Only this true high-pressure fog has such effective triple action — to cool, to smother, to isolate flames in seconds — with 90%

WINTERIZED REEL COMPARTMENTS

Removable enclosures winterize the two reel compartments. These, as well as pump, valves, gauges and controls, are warmed by engine heat.

POWER REWIND HOSE REELS

Faster, easier hose pick-up with power operated reels. Hose lays out smoothly and easily over roller guides.

400 FEET OF HIGH-PRESSURE HOSE

The 200 feet of special, 3500 pounds burst test hose on each reel can be easily handled by one man.

SPACIOUS HOSE BED

Smooth, level hose bed is properly ventilated, carries 1200 feet of 2½-inch and 400 feet of 1½-inch volume hose.

ILLUMINATED CONTROL PANEL

All gauges, valves and controls are centralized for instant operation — illuminated for safety and easy reading at night.

BONDED-TO-METAL FINISH

For longer life and better paint finish, a special corrosion-resistant process is used on all metal surfaces.

40 FEET OF SUCTION HOSE

Standard equipment includes two 10-foot lengths each of 2½-inch and 4½-inch hard suction hose, complete with hydrant adapters and suction screens.

500-GALLON, 10-GAUGE STEEL TANK

Smooth cornering, starts and stops assured by six-compartment tank with low center of gravity. Prevents undesirable water surge.

John Bean Fire-Fighters can be mounted on most standard truck chassis

less water damage. Fire extinguishing value of water is increased by a ten-to-one ratio — makes the 500 gallons of water on the truck go ten times further.

Add to this, the truck's multiple lines of hard-slugging, Underwriters' approved volume streams and you have an unbeatable combination. Two great John Bean pumps . . . two proven methods of fire-fighting. Use them separately or both at the same time — in any combination. And for fighting grass and brush fires, use high-pressure fog while the truck is in motion.

Because they're designed by firemen . . . men who've fought fire under all kinds of conditions . . . John Bean equipment is designed right for ease of operation. Arriving at a fire, you're in business with four easy steps. Put pump in gear, step out of cab, open valve, adjust throttle for RPM — and presto! your lines are ready for instant action.

ASK FOR THE JOHN BEAN HPV CATALOG

The proof is in the doing.

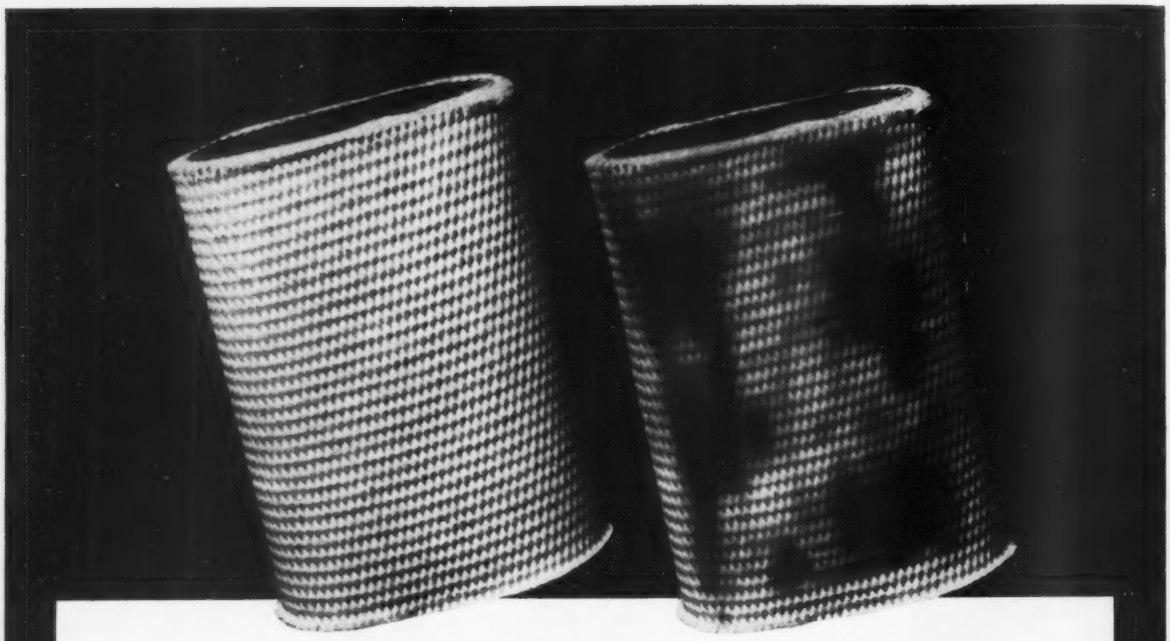
See for yourself what a John Bean HPV Fire-Fighter will do for your community's fire safety. In Lansing, Michigan, you'll get expert instruction and actual practice in volume and high-pressure fog methods at John Bean's Fire-Fighting School. In the meantime, why not contact your local John Bean representative, or write factory direct. In many localities, a demonstration can be arranged for you.

JOHN fmc **BEAN**

Dept. 126
Lansing 4, Michigan

P.O. Box 145
San Jose 3, California

A Division of Food Machinery and Chemical Corporation



WHAT MAKES THE DIFFERENCE IN THESE TWO?

Provar treatment! That's the difference.

Saturated with water, both samples were exposed to moist atmosphere, under conditions favorable to growth of mildew . . . *for six months, day and night.* The unretouched photos dramatize the effectiveness of the treatment.

Provar is an exclusive process developed by Republic Rubber for prevention of mildew and rot on Fire Hose. The six-month test confirmed the many, many service records that Provar treatment will not wash out or lose its effectiveness.

Illustrated below—the four fine grades of Municipal Fire Hose made by Republic Rubber. All are supplied with Provar protection against mildew and rot.

GOOD FIRE HOSE BY REPUBLIC RUBBER

CHAMPION—Dacron filler, test pressure of 600 lbs. Best grade Fire Hose made.

TOWER — Dacron filler, test pressure of 400 lbs.

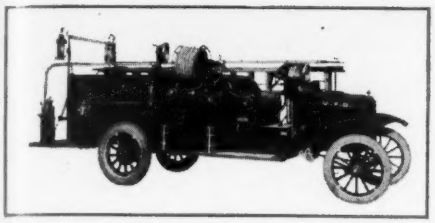
CHARIOT — Cotton yarn, test pressure of 400 lbs.

TARGET—Cotton yarn, made to meet demand for heavy-duty hose at moderate cost.

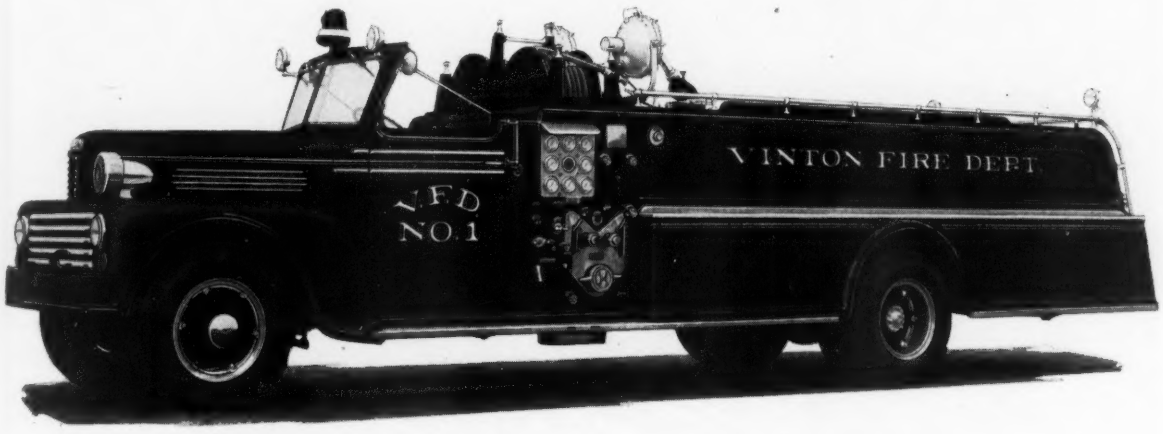
REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS



THEN and now it's HOWE

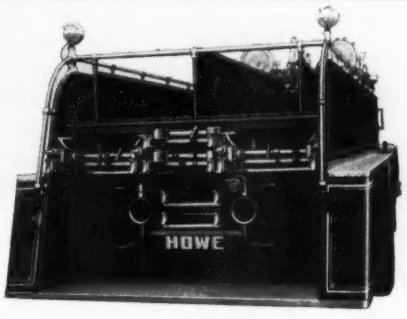


Finest in fire-fighting apparatus for four generations

THERE'S an affinity between the early and modern HOWE pumpers above. Each can be termed the complete fire fighter of its day —complete with pump, hose, tank and ladders. The early one dates from 1923, but HOWE produced its first automobile pumper in 1908, the result of experiments begun in the pioneer days of motors.

HOWE LEADERSHIP

B.J.C. Howe, who founded the company in 1872, obtained patents on the first horse-operated fire department type piston pump ever built. Keeping up the tradition he established, HOWE was first to combine a volume pump and a high-pressure fog power take-off pump. Always in a HOWE pumper you may specify the latest and best in equipment, on a custom-built HOWE Defender chassis or a commercial chassis. You will have exclusive features like the HOWE automatic pump prime indicator and special HOWE construction which makes a pumper perform better and last longer. Look to HOWE for the finest in fire-fighting apparatus.



Rear view of quadruple combination unit on HOWE Defender chassis for Vinton, Ia. Truck has 750 GPM pump, 200-Gal. Booster Tank, two 40′ 3-section ladders, three 28′ 2-section ladders, one 16′ roof ladder, one 14′ roof ladder, one 10′ folding ladder, 6 pike poles. All ladders and equipment are mounted in enclosing compartments. Also nine large compartments to house portable pumps and other items. Truly a fire truck to save time, manpower and property!

HOWE

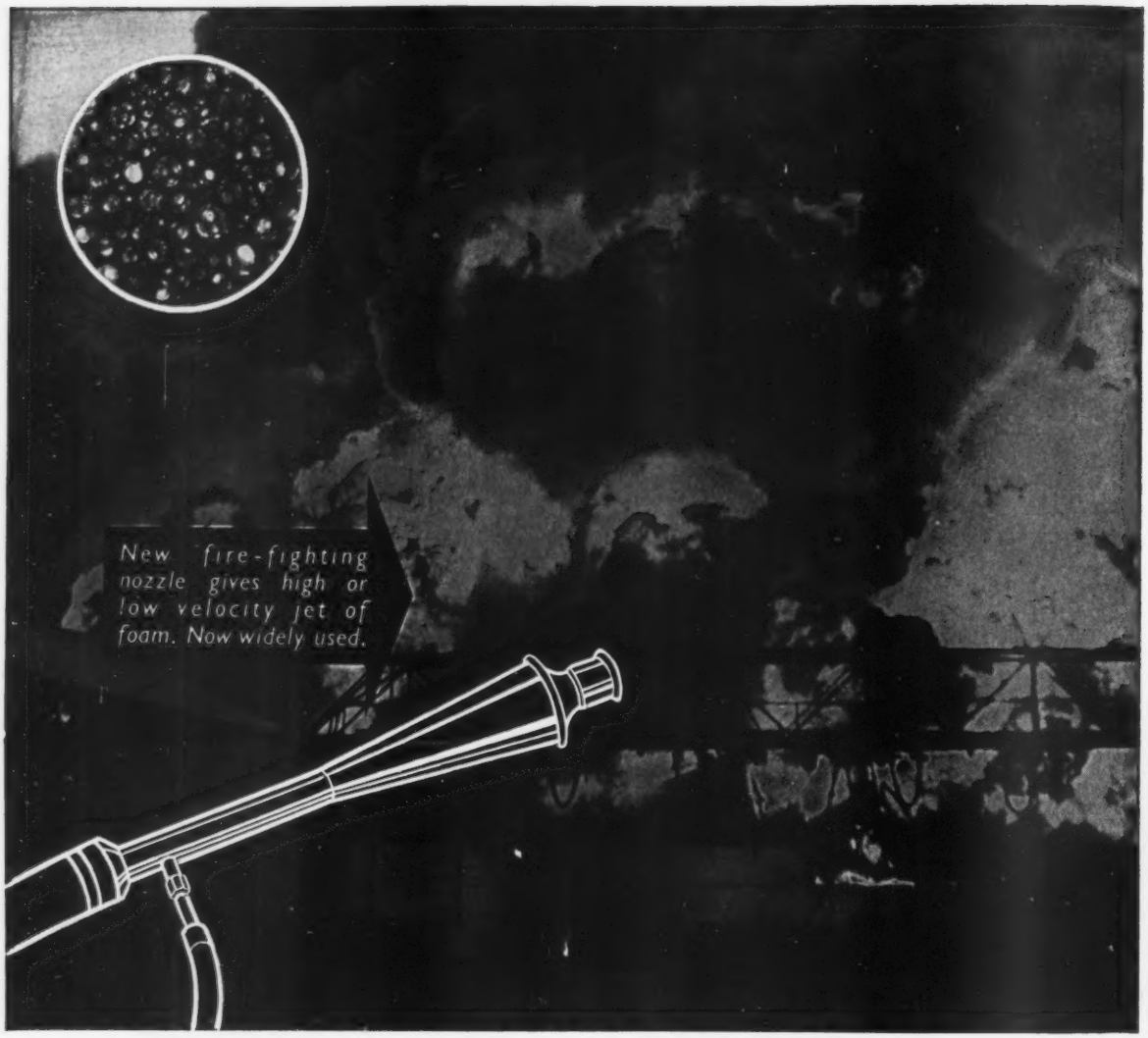
HOWE

MEMBER FAM
(Fire Apparatus Manufacturers Association)

FIRE APPARATUS COMPANY

"dependable fire apparatus since 1872"

Dept. FE456, 1400 West 22nd Street, Anderson, Indiana, U. S. A.



Photomicrograph Mag. X30 shows close-knit bubble blanket of foam.

The type of dangerous oil fire that is

KILLED QUICKLY BY

Nicerol, with pH 6.8 to 7.3, does not corrode drums or valuable equipment. It does not form sludge. 3 gallons of Nicerol NLXX (3%) Foam Liquid with 100 gallons of water, fresh or salt, forms 1,000 gallons of close-knit foam (see photomicrograph above). A Nicerol test can cost you nothing this way:— Write the one word SAMPLE on your official stationery and we will send you, freight pre-paid anywhere in the U.S.A. or Canada, a 5-gallon can of Nicerol NLXX (3%) for $20 C.O.D. (or enclose draft). The $20 cost of this sample will be deducted from your first 100 gallon or larger order for Nicerol.

Nicerol

foam—
AND IT STAYS DEAD

A dense blanket of adhesive, cohesive foam which actually follows the fire—stifles it, outlasts it and prevents flashback — that's Nicerol, most widely used foam compound in the world.

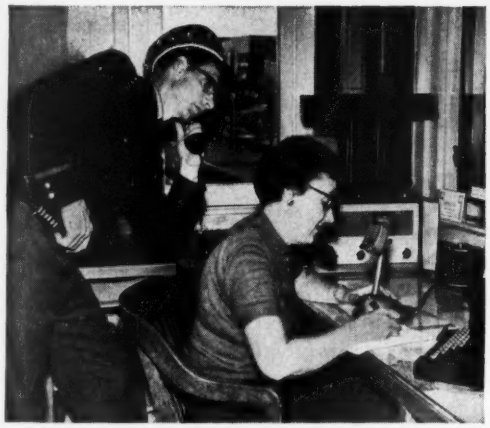
Full technical and commercial details available from:—

GEORGE REYNOLDS & ASSOCIATES, P.O. BOX 395, THORNWOOD, NEW YORK.
THE GENERAL DETROIT CORP., P.O. BOX 263, DETROIT 32, MICHIGAN.
THE GENERAL PACIFIC CORP., 8740 WEST WASHINGTON BLVD., CULVER CITY, CAL.

Volunteer firemen in Danville, Indiana have fire alarm radios at home

New General Electric Tone Control Receivers Pick Up Fire Call Signals Relayed Through Police Radio System

Bedside Fire Alarm! G-E monitor receiver at home of Captain Campbell makes a 24-hour contact possible. Tone system picks up Danville fire calls only.



Fire Report Coming In! As the police department receives a 'phoned fire report, Danville dispatcher Lelia Brown radios the alarm to fire department volunteers through General Electric receivers in their homes.

Ready To Roll! Danville Police Chief Berzenye checks fire location with Fire Chief Rader. Truck is equipped with General Electric high band two-way radio.

Member turn-out for alarms in Danville, Indiana is consistently high, regardless of the hour. The reason: There are fifteen key members of this crack volunteer fire company who have General Electric radio receivers in their homes. Fire Chief John Rader estimates these radios will pay for themselves in the first three years of operation.

Entire Department G-E Radio-Equipped

All police and fire radio in Danville is General Electric equipment. Two fire trucks and the Chief's car are equipped with complete two-way units, in addition to the police radio and home monitors which are pre-tuned to receive fire calls only. The high band 50-watt system has an operating range of 40 miles. Hendricks County fire equipment is completely radio-equipped. Radio contact with fire and police agencies in neighboring counties speeds mutual aid activities.

2-WAY MOBILE RADIO

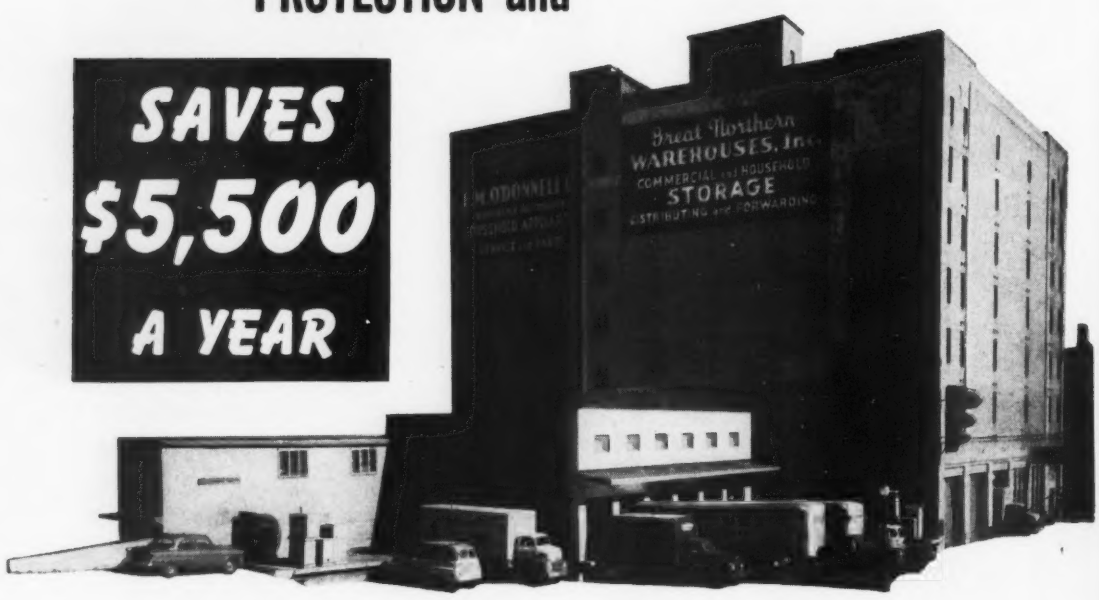
New G-E Progress Line Radios

New Progress Line equipment can provide tone signal calling, automatic re-call, and other important advantages. Ask your G-E Communications Counselor to show you how a system like the Danville network can improve your communications. Or, write: *General Electric Company, Communication Equipment, Section X5946, Electronics Park, Syracuse, New York.*

Progress Is Our Most Important Product

GENERAL ELECTRIC

Great Northern WAREHOUSES, Inc. protects its property *Automatically*.... gets better FIRE and BURGLARY PROTECTION and



Use of ADT Central Station Automatic Services to protect our warehouse around the clock against fire, burglary and heating equipment failure has, through the years, been highly satisfactory. These services not only have proved efficient, but they give us a current annual saving of $5,500 over the cost of less effective measures.

Vice President

Year after year, customers of Great Northern Warehouses, Inc., Syracuse, N. Y., have had assurance of complete and effective protection against fire, burglary and other hazards. The building and its contents are safeguarded throughout by a combination of ADT Central Station Sprinkler Supervisory and Waterflow Alarm, Burglar Alarm and Automatic Heating Supervisory Services.

The satisfaction expressed by Mr. Hammerle is typical of the comment of thousands of warehousemen and other business executives who know that ADT Automatic Services give better protection for property, profits, customers' goods, and employees' jobs than other methods, *and at less expense.*

Whether your premises are new or old, sprinklered or unsprinklered, there is an ADT Automatic Protection Service to detect dangerous conditions and to notify fire, police or other protective forces, immediately and *automatically.*

An ADT specialist will be glad to show you how combinations of automatic services can safeguard your property. Call if we are listed in your phone book; or write to our Executive Offices.

ADT

Controlled Companies of
AMERICAN DISTRICT TELEGRAPH COMPANY
A NATIONWIDE ORGANIZATION
Executive Offices
155 Sixth Avenue, New York 13, N. Y.

Well Balanced!

INDIAN
FIRE PUMPS
Are the "Stepping Stone" to Faster Fire Fighting . . .

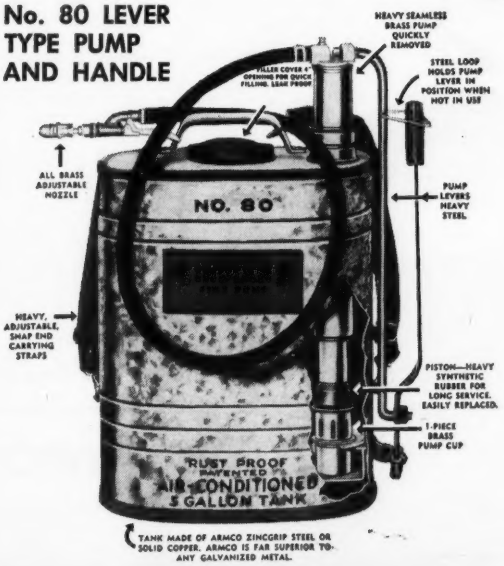
No. 90 SLIDING PUMP STYLE

All Seams are Electric Welded — no leakage. Pump throws 30 ft. pressure stream or nozzle adjusts for spray. Strongly built—lasts for years.

"Choice for Quality the World Over"

Chief Charles Hawley of Maple Springs, N. Y., Fire Department says: "Despite very rough handling and bumping around, the **INDIAN FIRE PUMPS** we got way back in 1933 are still on the job. They were bought by my father, former Chief Everett Hawley."

No. 80 LEVER TYPE PUMP AND HANDLE


HEAVY SEAMLESS BRASS PUMP QUICKLY REMOVED
FILLER COVER 4" OPENING FOR QUICK FILLING. LEAK PROOF
STEEL LOOP HOLDS PUMP LEVER IN POSITION WHEN NOT IN USE
ALL BRASS ADJUSTABLE NOZZLE
NO. 80
PUMP LEVERS HEAVY STEEL
HEAVY, ADJUSTABLE, SNAP END CARRYING STRAPS
PISTON—HEAVY SYNTHETIC RUBBER FOR LONG SERVICE. EASILY REPLACED.
1-PIECE BRASS PUMP CUP
RUST PROOF PATENTED AIR-CONDITIONED 5 GALLON TANK
TANK MADE OF ARMCO ZINCGRIP STEEL OR SOLID COPPER. ARMCO IS FAR SUPERIOR TO ANY GALVANIZED METAL.

Both types approved by UNDERWRITERS' LABORATORIES

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"There is no fire extinguisher that anywhere near compares with the **INDIAN FIRE PUMP.** Last summer we had two bad brush fires which were brought under control with **INDIANS** alone. The only available water we had was in the **INDIAN** tanks. The wind was blowing right toward the woods and six men killed the fire down with just their **INDIAN FIRE PUMPS.**"

Ray C. Whitney,
Wilton, Maine

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TRANSISTORIZED

Handie-Talkie®

PORTABLE RADIOPHONES

UNPRECEDENTED PORTABLE PERFORMANCE THROUGH TRANSISTORIZED CIRCUITRY

HIGHEST RF POWER... New **HANDIE-TALKIE** radiophones are the *most powerful* portables ever built—up to 20 times greater power output gives you greatly extended coverage and clearer messages.

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MAXIMUM PORTABILITY... Featuring transistors, exclusive PLA-cir plated chassis and all-aluminum housings, the **HANDIE-TALKIE** radiophone is smaller and lighter than ever—as much as 50% reduction in weight and size.

OPTIMUM SERVICEABILITY... New "swing-out" chassis design exposes all parts in *seconds* for fast, simplified servicing or alignment. "Snap-on" interchangeable power packs speed routine maintenance, permit rapid battery renewal.

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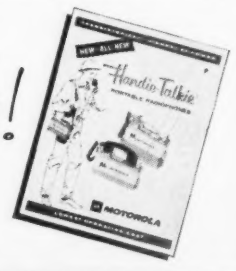

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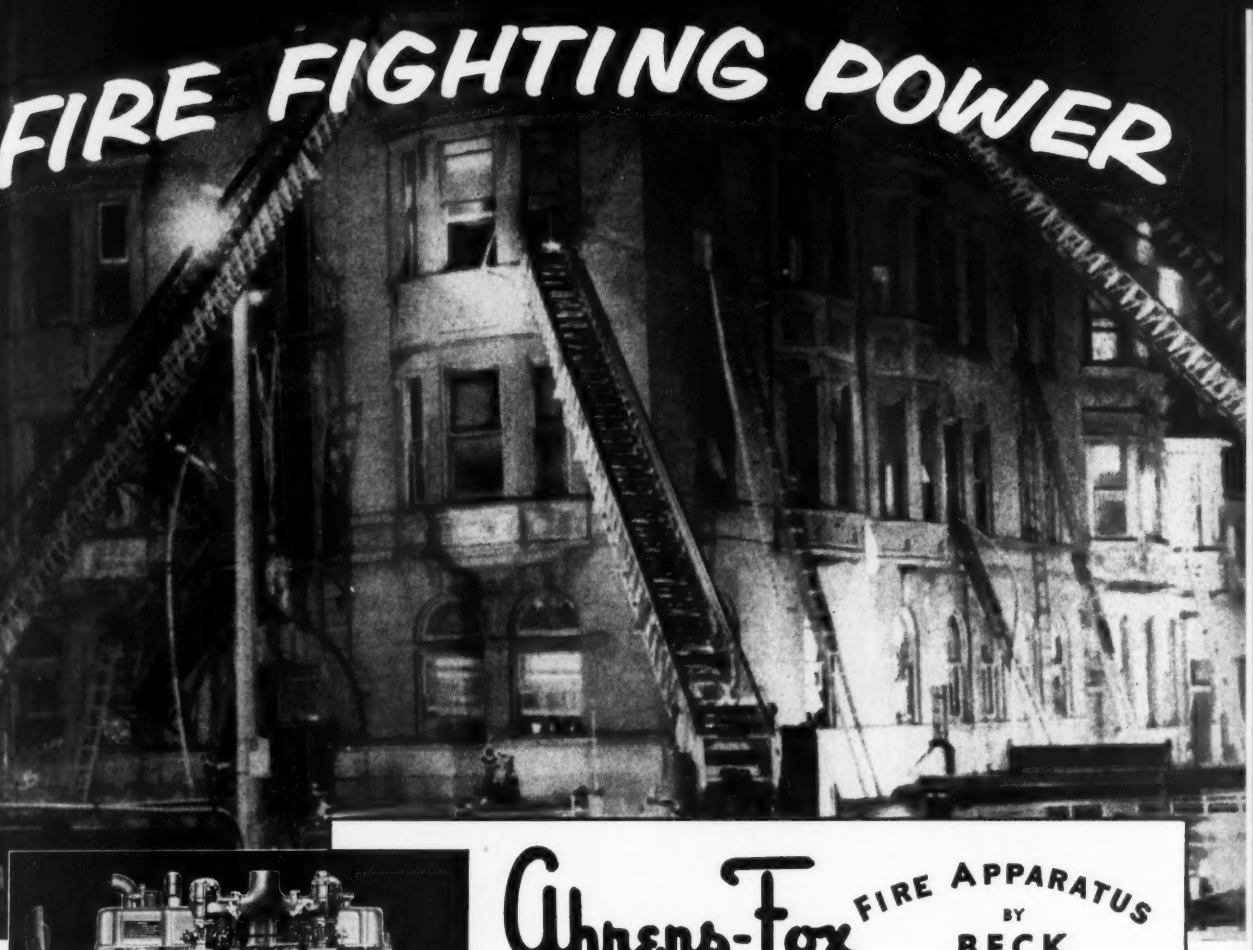
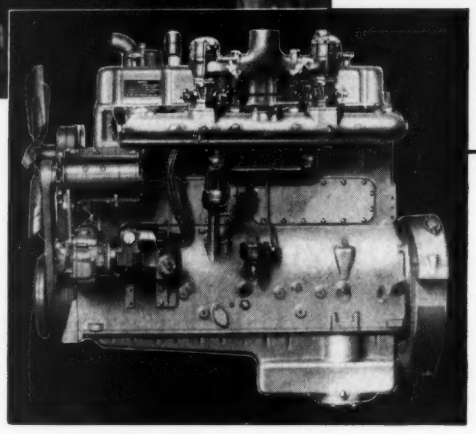
FIRE FIGHTING POWER





276 hp WAUKESHA 145-GZB High Output FIRE FIGHTER Engine — six cylinders, 5⅜-in. bore x 6-in. stroke, 817 cu. in. displ., with counterbalanced and vibration dampened 3½-in. 7-bearing hardened crankshaft; dual downdraft carburetion; dual ignition; precision extra high capacity bearings; removable wet type cylinder sleeves, aluminum pistons, overhead valves with Stellite-faced exhaust valves and seats. Arranged for full electrical equipment and all modern accessories. Get descriptive Bulletin 1662.

50th ANNIVERSARY Waukesha MOTOR CO. 1906-1956

Ahrens-Fox FIRE APPARATUS BY BECK

The 276 hp 145-GZB Waukesha Fire Fighter Engine gives this Model FCB new Ahrens-Fox pumper its quick getaway, fast-run reliability and power-plus pumping dependability. Custom-engineered, designed and built by C. D. Beck & Company, Sidney, Ohio, FCB series pumpers; 1250, 1000, and 750 gpm—all have the Waukesha 145-GZB Engine shown. Their ECB series: 1000, 750 and 600 gpm pumpers, all have 226 hp 140-GZB, also counterbalanced, Waukesha Engines (not shown). Each series has 160″ wheelbase, 96″ width, 24′ overall length, with 5-man cab-forward cabs, curved glass windshields, quadruple headlights, and Hale pumps. Get engine Bulletins 1662 and 1661. ***Waukesha Motor Co., Waukesha, Wis., New York, Tulsa, Los Angeles.***

309

Model FCB Ahrens-Fox Pumper

WAUKESHA FIRE FIGHTER ENGINES

Let this "Visiting Fireman" train your men to fight fire . . . it could save your business

You have a *potential* fire-fighting team right in your plant. These would-be fire fighters *could save your business if fire struck unexpectedly*. All they need is training, the kind that will enable them to respond instantly and properly to any kind of fire emergency.

Ansul can provide this training for a group of your men just as it has for hundreds of its customers. And there will be no charge. It is just one of the "essential" services that Ansul provides for its customers.

Twenty years experience in the fire protection industry has proved to Ansul many times over that all the fire equipment in the world will not save your business *unless* trained hands are available to man that equipment. So, it is important to Ansul that you get *training* along with the fire equipment you buy. Only then will you experience the security that goes with having a complete fire protection program. Only then will you get what you really pay for, what you really need—*complete fire protection*.

You owe it to the life of your business to learn more about Ansul's in-plant fire training service. Get in touch with your local ANSUL MAN through the yellow pages of your phone directory, he will be happy to call on you and explain all of Ansul's customer services in detail. Or write to THE ANSUL CHEMICAL COMPANY, Dept. FE-4, Marinette, Wisconsin.

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THE SPOTLIGHT IS ON THIS NEW
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SERIES 900-A
WITH EXCLUSIVE TONGUE AND GROOVE CONSTRUCTION
TWO SECTION SERIES 900-A

A BRAND NEW DESIGN IN THE FAMOUS DUO-SAFETY LINE

. . . and featured in the fire ladder spotlight is this new, outstanding development in aluminum ladder construction. It's Duo Safety's latest addition — the 900-A Series Fire Ladder which combines the strength and safety of Channel Rail construction with an exclusive tongue and groove design that firmly and securely locks the sections together without hooks or brackets. This outstanding structural arrangement prevents jack-knifing of the ladder — and — eliminates the possibility of finger-pinching! Series 900-A will add safety and dependability to your use of fire ladders — Write today for catalog page on this fine new ladder and others in the complete Duo-Safety line.

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LADDER CORPORATION
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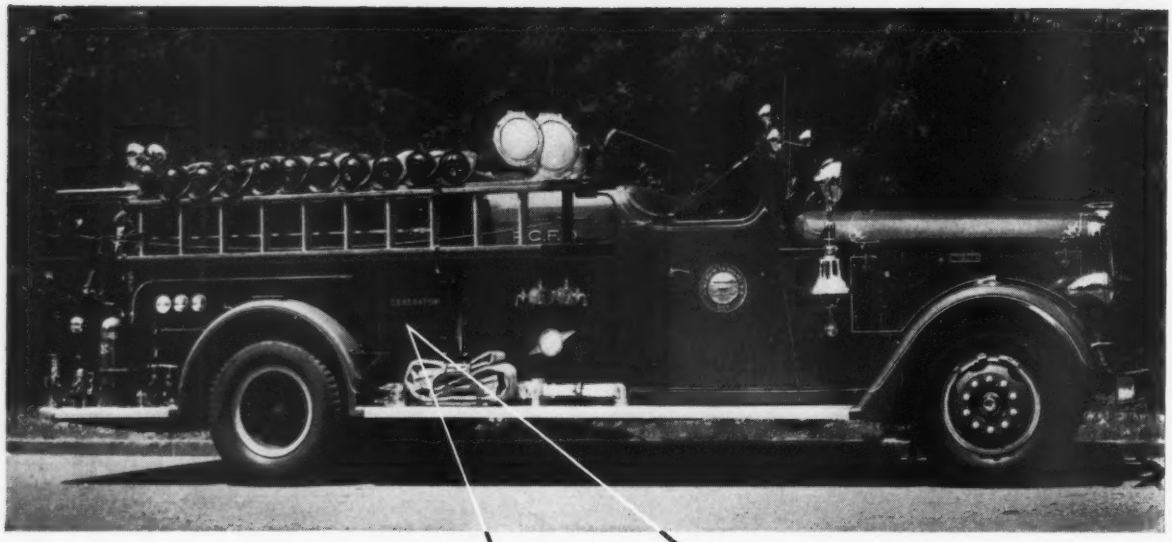
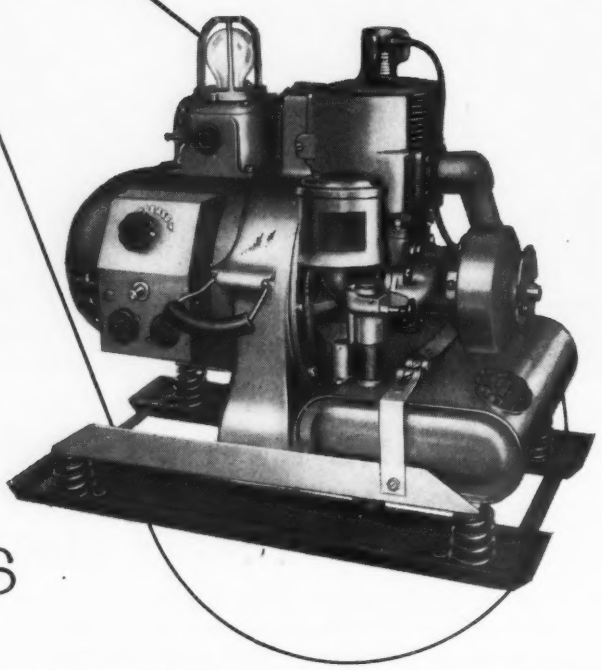


FIRST CHOICE WITH FIRE DEPARTMENTS



Whenever you see a generator compartment on a fire truck, the chances are that inside . . . ready for a call . . . is a Homelite Carryable Generator. It's the number one choice with fire departments . . . has been for more than a quarter century . . . and for two good reasons. One, its small size and two, its big performance.

Very compact, a Homelite takes up a minimum of space on a truck. Light in weight, a Homelite is carried by one man. And famous for its dependability, a Homelite starts quickly in any weather . . . gives you the bright flickerless floodlight you need . . . and is not affected by rain, dust or ice.

Insist on Homelite Gasoline Engine Driven Generators. Always!

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PERFORMANCE · DEPENDABILITY · SERVICE

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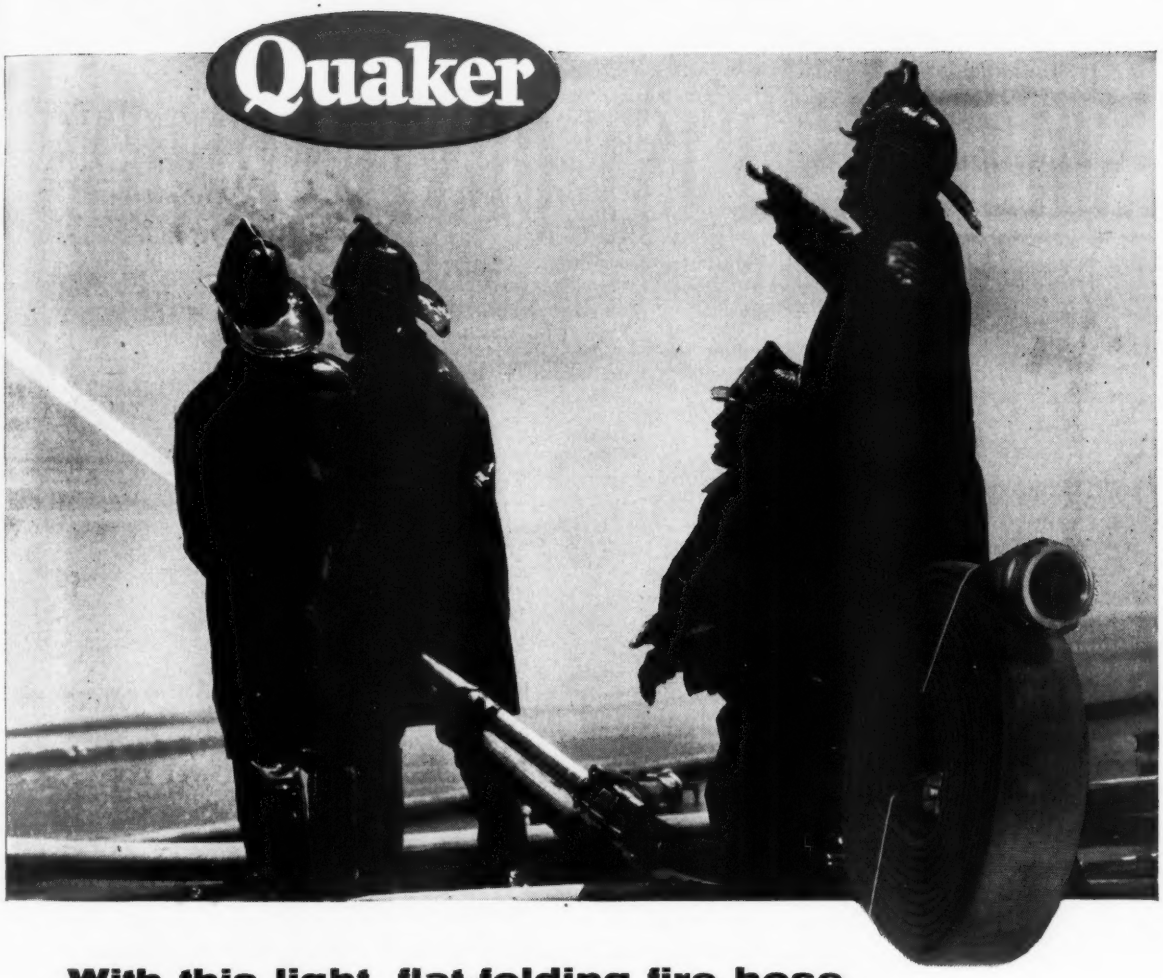
A Division of **TEXTRON AMERICAN, INC.**

Canadian Distributors: Terry Machinery Co., Ltd., Toronto, Montreal, Vancouver, Ottawa.



With this light, flat-folding fire hose you're ready for fast, protective action

Simplify your buying! Save multiple requisitioning. Make your Quaker-Quaker Pioneer distributor your single service for all rubber products including conveyor belting. Write for free brochure and name of your nearest distributor.

Lightweight, space-saving and easy to handle, this hose belongs in *your* safety program. It folds flat for neat storing on racks—even ones made for unlined linen hose. Saves precious minutes in emergencies, too. When pulled from rack it unfolds quickly without kinking. Also dries rapidly, enabling you to test it frequently in fire-drills. Tube is slow-ageing synthetic rubber compound, crack-proof, leak-proof, non-acid forming and always resilient. Cotton yarn jacket and tube securely bonded together. Available in I. D. sizes 1½", 2" and 2½" all guaranteed to take test pressure of 300 p.s.i. In 25, 50, 75 and 100 ft. lengths. Complete line also includes belting, packing and moulded rubber for every use.

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QUAKER PIONEER RUBBER DIVISION

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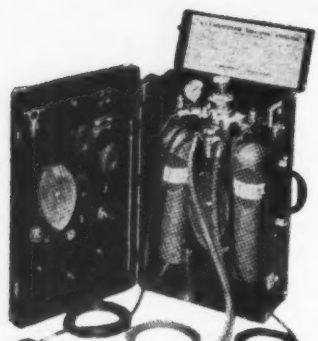
E & J RESUSCITATOR - INHALATOR - ASPIRATOR



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When partial obstructions will not yield to aspiration, or when the air passages are swollen almost shut, the exclusive E & J feature "Precision Flow Control" assumes life-saving importance in emergency rescue treatment.
With it the operator can quickly find just the exact flow of oxygen that will squeeze past obstructions short of complete blockage to provide full inhalation and exhalation at a *slow but life-saving rate!*

FIND OUT MORE ABOUT THIS VITAL E & J FEATURE . . .
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E&J

E & J MANUFACTURING COMPANY
100 E. Graham Place, Burbank, California

TRAGEDY COMES TO LEXINGTON. This tank truck jackknifed, tipped over on its side and traveled about 100 feet in that position. Sparks showered up from beneath the truck and it ignited. The driver was killed.

Rockwood FOAM controls tank truck fire in minutes!

Here is the true story from the pages of the Boston Globe and eye-witnesses

It was Thursday, March 17, 1955, 9:30 a.m. A tank truck was stopping at a traffic light on the Concord Turnpike in Lexington, Massachusetts. Suddenly, it jackknifed. There was a puff of smoke, and then flames. The driver was hurled onto the roadway. His clothes were aflame and he collapsed. Onlookers said flames reached 200 feet in the air.

Minutes later, in answer to a telephone alarm, Engine 2 of the East Lexington Station was on the scene. Flames whipped by winds and fed by several thousand gallons of gasoline were sweeping across the road and scorching the surrounding trees. Black smoke billowed into the air.

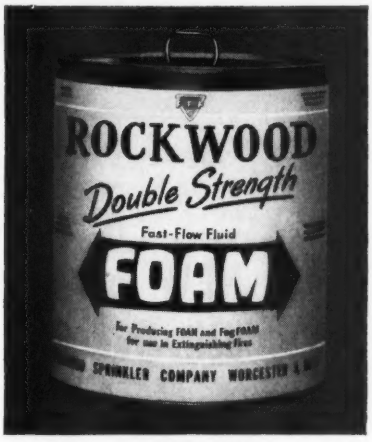
Roy A. Cook, Chief Engineer of the East Lexington Station, ordered Engine 2, which carries 500 gallons of water, to hold back the flames until Engine 1, carrying Rockwood FOAM, could be put into action.

Soon Engine 1, equipped with a 1½" Rockwood FOAM eductor plus the new type SG-60 FOAM nozzle with adapter for straight stream and FogFOAM, was at the scene. *With this Rockwood equipment and FOAM, Engine 1 brought the fire under control.*

Does your city have this protection? With ever-increasing traffic, more filling stations and more tank trucks on the road, the frequency of gasoline fires is on the increase.

When tragedy came to Lexington, headlines told a grim story. But a major catastrophe was prevented because the East Lexington Station was prepared with Rockwood products.

Be prepared. Put this great fire fighter to work for you. Specify Rockwood Automatic FOAM Proportioning Systems, Rockwood FogFOAM nozzles and FOAM liquid when you order a fire truck.



ROCKWOOD DOUBLE-STRENGTH FOAM LIQUID, 3 parts mixed with 97 parts water, forms a solid FOAM blanket that quickly re-seals itself. Available in 5 gallon drums.

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Engineers Water . . . to Cut Fire Losses

Distributors in all principal cities

SEND FOR THIS INFORMATIVE BOOKLET

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Please send me your illustrated booklet on Rockwood fire fighting products.

Name.....
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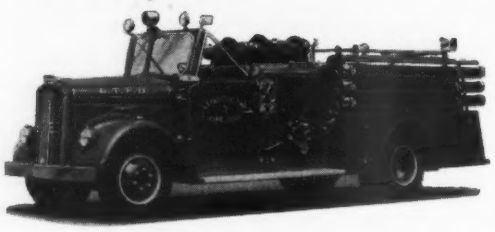
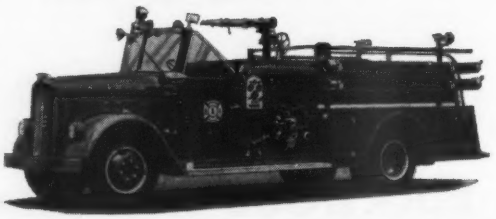
Early Delivery on

WARD LaFRANCE

Fireball Special





America's NEW low-cost fire truck delivered in 30-60 days

In response to popular demand, production lines at Ward LaFrance have been set up to permit early delivery of Fireball Specials. Now . . . in a matter of days . . . this modern, low-cost truck can become part of your fire-fighting force. Proven in service over the past year and a half, this truck has received widespread praise and public acceptance.

The Fireball Special is engineered and built for long years of hard service . . . offers quick starting, fast flexible operation and generous pumping power. Particularly well-suited for suburban and rural fire company use, it incorporates a Chrysler Firepower 183 HP engine, 500 or 750 GPM pump, 500 gallon booster tank, plus other outstanding features. Write for full details on the Ward LaFrance Fireball Special . . . but do it now!

WARD LA FRANCE TRUCK CORPORATION

Fire Apparatus Manufacturers for over 38 Years

GENERAL OFFICE & FACTORY: Grand Central Avenue, Elmira, N.Y. Tel. 3-5631. **DIRECT FACTORY BRANCH:** 139th Street & Bruckner Blvd., New York 54, N.Y., Tel. CYpress 2-3300. **EXPORT:** Ward LaFrance International, Inc., Elmira, N.Y., U.S.A., Cable Address: "Wardtruck"

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CONTROLLED QUALITY—

in neoprene and vinyl coated nylon fabrics

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From fibre to fabric Amerotron serves America

A TEXTRON AMERICAN COMPANY

Industrial Sales Division, Amerotron Corporation,
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Gentlemen: Send free illustrated booklet detailing advantages of protective covers of coated SUPERLITE Nylon fabrics.

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MIDWESTERN

Safety Clothing for FIREMEN

The Original
STRIPED SAFETY COAT

- ☆ ***New Yellow Rubber Stripes!***
- ☆ ***Maximum Visibility!***
- ☆ ***Maximum Durability!***
- ☆ ***Exclusive Safety Features!***

YOU deserve the BEST PROTECTION OBTAINABLE for your hazardous work of protecting life, and property against fire. The Mackinaw Safety Coat with new yellow stripes is the answer! Highly visible stripes are rubberized as part of the material . . . not painted, glued or sewed on. Tests indicate that the new yellow, like black, retains its natural color and has the same durability.

There are many imitations but no substitute for the superior quality, design, fabric texture and safety features you get by specifying MIDWESTERN!

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COMBINATION SAFETY SUIT

The Midwestern Rubberized Coat and Bunker Pants make it easy for firemen to keep both warm and dry even in the most severe weather. Close fitting collar and elastic inner sleeve keep out sparks and water. Detachable wool lining. Pants have double-stitched seams, reinforcing rivets at points of strain, large roomy pocket space.

For complete information on our full line of safety clothing for firemen, see your Midwestern dealer. A letter to the factory will also bring you literature and materials for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Safety Coats**

MAXIM—MAGIRUS

long...long after the purchase price has been forgotten—

you'll be glad you selected—

MAXIM

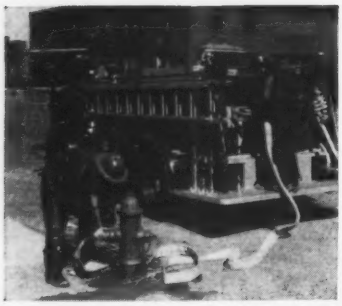
The world's largest and unquestionably the finest aerial. Up to 170 feet of dependable, modern ladder on a mechanism that is truly an engineering marvel.

Philadelphia is using them and other cities are looking forward to using them.
May we send you information on the Maxim-Magirus?

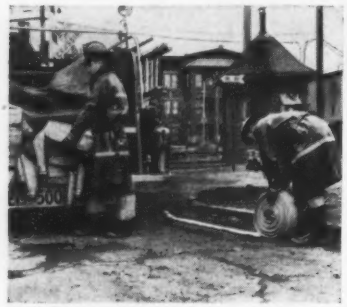
MAXIM MOTOR COMPANY

Builders of a complete line of motor fire apparatus including aerials of 65'-75' and 85' and the Maxim-Magirus up to 170'.

MIDDLEBORO, MASSACHUSETTS

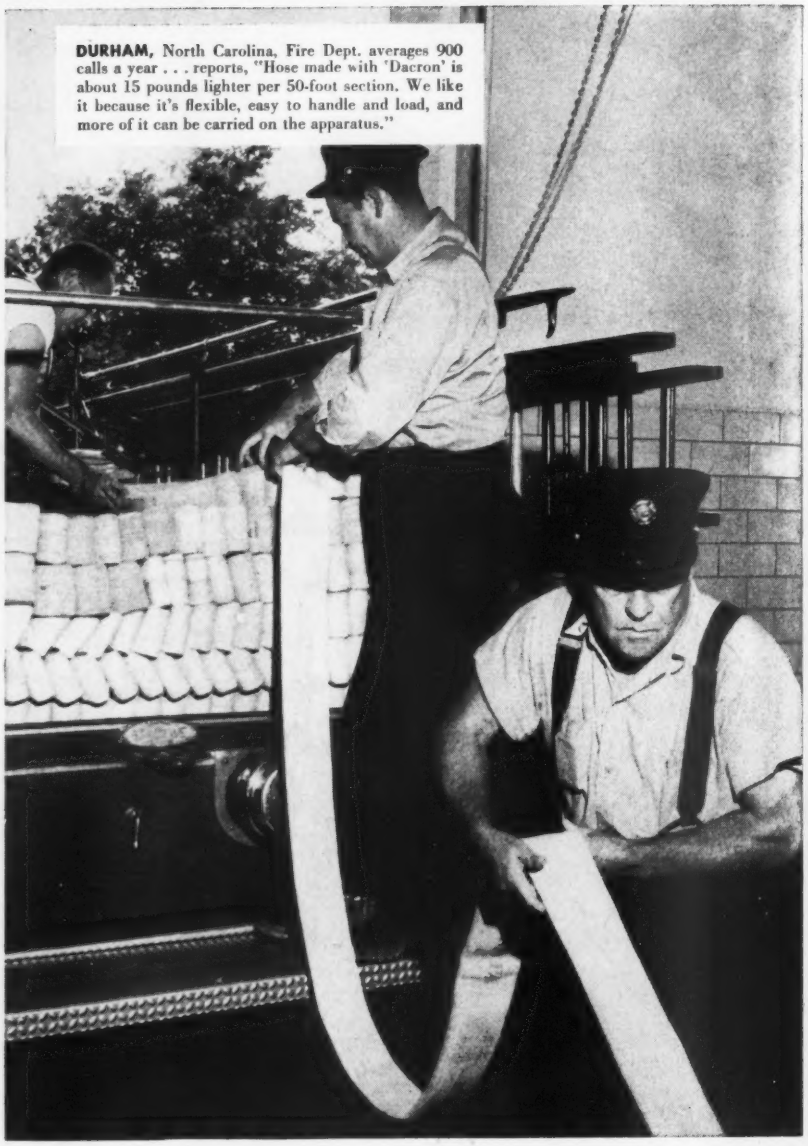


OMAHA, NEB. "We've found the advantages of hose made with 'Dacron' are many—from quick drying to mildew resistance."



NIAGARA FALLS, N. Y. "Lightweight hose made with 'Dacron' gets into action fast—makes coiling and racking a quicker, easier job."

COLUMBUS, O. "Extra-strong hose made with 'Dacron' is preferred, because it needs less maintenance—cuts repair costs."



DURHAM, North Carolina, Fire Dept. averages 900 calls a year . . . reports, "Hose made with 'Dacron' is about 15 pounds lighter per 50-foot section. We like it because it's flexible, easy to handle and load, and more of it can be carried on the apparatus."

Durham Fire Dept. reports:

"Hose made with DACRON is easy to handle and load"

REG. U.S. PAT. OFF.

Lightweight, flexible and extra-strong, hose made with "Dacron"* polyester fiber helps the Durham Fire Department maintain top efficiency. Chief C. L. Cox reports that 25% more hose made with "Dacron" can be carried on each truck. Like fire chiefs across the country, Chief Cox reports better all-round performance from fire hose made with "Dacron". Used as the load-carrying "filler" cord that reinforces the hose, this Du Pont fiber permits a hose that's light and flexible—yet *stronger* than ordinary hose of the same construction.

Du Pont makes "Dacron" and supplies the yarn to hose manufacturers. The combination of the unusual properties of "Dacron" plus hose manufacturers' skill has resulted in a superior fire hose. Hose made with "Dacron" is made by all leading fire-hose manufacturers. The next time *you* buy hose, be sure it's made with "Dacron". E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

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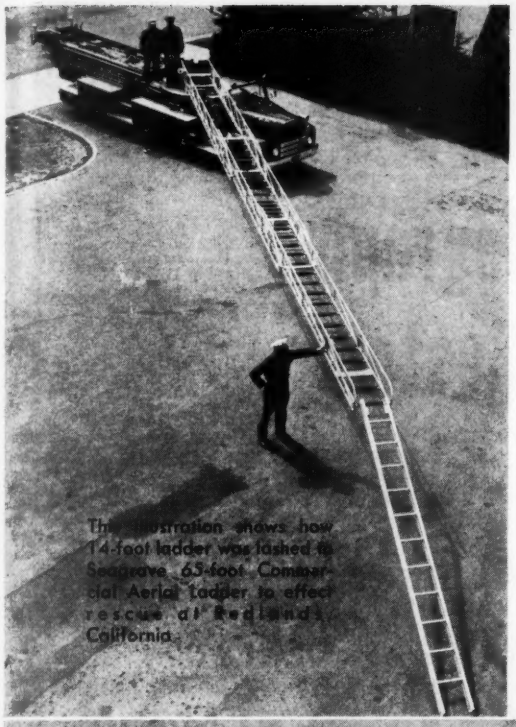


This illustration shows how 14-foot ladder was lashed to Seagrave 65-foot Commercial Aerial ladder to effect rescue at Redlands, California.

Teenager Saved From River

Plucked From Tiny Island By Ladder Truck

Redlands' new Seagrave fire truck with its hydraulic extension ladder was used in a spectacular rescue last night as an East Highlands teen-ager was picked from a tiny island where he was marooned for 2½ hours after his car was washed away by the swollen Santa Ana river at the Cone camp ford north of Mentone.

Deputy Sheriff Willard Farquhar and Earl Wilson, reserve deputy, drove from East Highlands to the stream to check the water level when they spotted George R. Favela, 16, marooned on a tiny rock island by the roaring torrent. It was then 6:40 p.m.

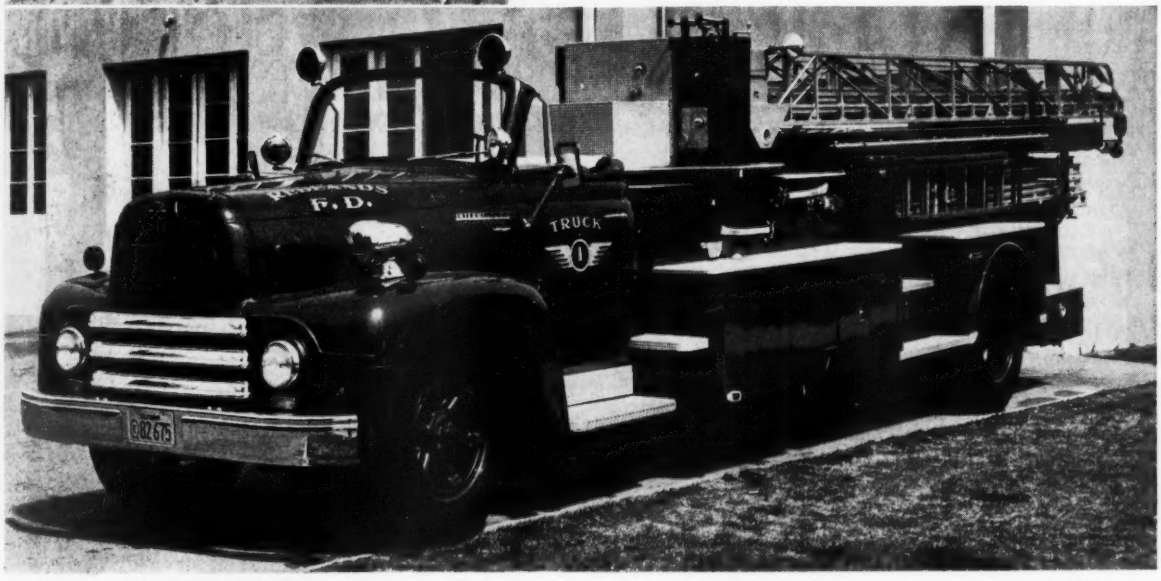
He was about 75 feet from the water's edge. At that point the water was over 100 feet wide.

Deputy Farquhar sent a radio message to the sheriff's office for rope and to Redlands for the ladder truck.

Chief Carl Rundberg directed the rescue operation. The truck was edged in as close as possible, the 65-foot hydraulic ladder was extended and a 14-foot ladder was lashed to it in order to reach the youth. By this time it was 8:45 p.m.

The youth said he was trapped by the swift water as he tried to drive across the river, which was swollen by the 24-hour rains. He was able to crawl from the car as the waters rolled it down stream.

Captain Dave Wilcox crawled out on the ladder and made the spectacular rescue. Also aiding Chief Rundberg was assistant Chief Walter Wagner, firemen Leonard Harder, Kenneth Witham and Roy Aldrich.



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Every day the Seagrave Commercial Aerial Ladder Truck is proving its versatility . . . This is the first quality safety-steel aerial ladder ever constructed to be in the budget reach of smaller cities and volunteer and industrial fire departments.

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We are interested in your Seagrave Commercial Safety-Steel Aerial Ladder. Send complete information.

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...It's automatic—and complete—from fire box to central office to enginehouse

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It's on the job 24 hours a day protecting life and property inside schools, hospitals, private buildings, industrials, and public institutions by means of Master-box-connected interior systems.

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FIRE ENGINEERING

VOL. 109, NO. 4 APRIL, 1956

Small Departments Face Big Problems

The volunteer fire forces of the nation today face many grave problems. One of the worst is that of keeping pace with the growth in fire hazards and resultant increasing need of improved fire protection in their districts.

Today, with the shifts in population in business and industry and the rapid growth of all-weather highways, there are no longer any rural and suburban fire departments. There are just fire departments—paid, part-paid and volunteer. Just as fire hazards know no geography, so too is the problem of fire suppression universal.

And while fire hazards, and demands upon the fire forces of our towns, villages and districts multiply and intensify, the costs to maintain and operate these forces are increasing. At the same time, also, the tasks of keeping the volunteer organizations at a high level of operating efficiency with the facilities at hand are growing apace.

Today, surrounding nearly every large city are costly real estate, mercantile and industrial developments which present riddles in fire suppression never before anticipated by those who set up the original fire defenses in those areas.

It matters little what impelled business and industry to move from the city to the hinterlands; it may have been to escape city taxes; to decentralize in fear of enemy attack; or to improve manufacturing and living conditions. The simple fact is that the changes have come about, and are continuing, and they have introduced new and, to many firemen, bewildering hazards and fire control problems, as typified by the vast housing developments, huge shopping centers and supermarkets, out-of-door theatres and sports arenas.

Evidence of the seriousness of the situation is seen in the study of large-loss fires over the past few years. More than half the conflagrations (fires entailing losses of $250,000 or over) have occurred outside the city limits and were fought, at least in their early stages, by volunteers.

These volunteers cannot necessarily be blamed for the resulting high losses. In many cases the cards were stacked against them before the fire occurred, or before they ever reached the fire ground. It is doubtful if even the largest municipal paid department could have controlled most of them, taking into account the types of buildings and occupancies involved, the delayed discovery and tardy alarm of fire, and the lack of modern fire detection, alarm transmission and extinguishing facilities.

It is manifestly absurd to expect fire departments—volunteers in particular—which were organized and equipped to cope with only the simplest, commonplace types of fires such as have previously been encountered in rural and suburban areas, to successfully combat today's complex, even deadly types of blazes that eventuate in these new hazards. Indeed it is remarkable that volunteers have managed to achieve the high plane of efficiency which distinguishes so many of them, in the light of the failure of local and area government to support them financially and in other ways.

It is high time that our volunteer fire forces were reviewed and re-evaluated, in view of their present and future responsibilities. It is time that they were given financial as well as moral encouragement. It should no longer be necessary for them to have to finance their own essential operations—to pay for the privilege of risking their necks. The businesses and industries which they must protect should pay their just share of that protection.

Mutual aid, under the organized county or area protection plan, is an asset of course; but it calls for cooperation and coordination of all fire protection forces, public and private. If outright fully-paid or paid and part-volunteer area protection such as is successfully being practiced in some localities is the answer, then let's have it.

The situation calls for action—by the public, industry, government, and by the fire service itself—and now!

Fred Shepard

EDITORIAL DIRECTOR

Some Fundamentals of

RURAL FIRE PROTECTION

Are rural and small town fire forces adapting themselves to the increasing fire suppression problems of urbanization?

MORE THAN ONE-TENTH of the nation's total fire loss for the year 1955 (over $1 billion), occurred in the rural areas. What is worse, over one-fourth of the approximately 12,000 deaths caused by fire were in that category.

Nor is the situation growing any better with the movement of people and capital, represented by business and industry, into these non-urban areas. It is true that more rural, district and suburban fire departments are being organized, but it is also true that the fire hazards of these areas are growing in complexity and volume, as concurrently are the problems of fire protection and prevention.

All of this emphasizes the need of a reappraisal of the fire suppression facilities presently in, or proposed for, these areas, and serious consideration of the need for creating additional such facilities to provide requisite protection in these growing districts.

Improved roads and highways, modern motorized fire apparatus, a general statewide recognition on the part of government officials of the need of better organizing for non-urban protection and the maintenance of interest of volunteer fire fighters in their calling, all are assets. But opposed to them are the drawbacks of lack of interest in fire safety on the part of so many farmers and small town businessmen, and scarcity of money to finance fire safety.

How rural fire protection is provided

There are a number of ways of providing farm communities, and open rural areas with fire protection. The three more common are:

1. Through individual rural fire departments or companies serving a district or township, or number of them.

2. Through county fire services, either full-paid, part-paid and volunteer, or outright volunteer; the respective individual fire companies or departments operating under a single head, and as a single unit.

3. Through urban municipal departments, paid or part-paid or vollunteer, which agree to provide non-urban fire protection either on a mutual aid, contractual or fee basis.

1. ***District Rural Fire Protection:*** Many states have enacted laws encouraging the forming of fire protection districts comprising one or more townships, or a part of a township, or parts of several townships, within which a tax may be levied for the provision of fire protection.

Many authorities generally believe that arrangements for fire protection made through a rural fire protection district, township or other legally authorized body is the most satisfactory method for both fire department and property owner and leads to fewer controversies over payment of fees, assignment of response, maintenance of equipment and general management.

Fire protection for all property within the limits of a specifically defined district is usually provided by the following methods:

a. Provision for full fire department facilities by fire protection district, including apparatus, equipment housing and personnel. Fire department is then located in the community or municipality included within the boundaries of the fire protection district.

b. Contract between an established fire department and the fire protection district, whereby the district is given protection for stipulated annual amount, or fee. Town or municipal fire department provides the apparatus and housing facilities, equipment, manpower, maintenance.

c. Provision and maintenance of apparatus and equipment by the fire protection district with manning and housing facilities provided by the municipal or town fire department. The service rendered is then paid for on the basis of an annual set fee per response, or per hour, or per year of operation.

In the State of Illinois, by 1953 more than 340 fire protection districts had been organized. About 40 per cent had qualified, with equipment and personnel; farmers who lived close enough to the station and who had facilities such as telephones and sufficient water storage, were entitled to reductions in insurance rates.

The Schuyler, Neb. Rural Fire District No. 3 protects over 700 farms at a reported average annual cost of about $2 each.

In Oregon, two-thirds of more than 150 rural fire protection districts in 1953 had qualified, at least partly, for reduced fire insurance rates to property owners. The Oregon Fire Marshal estimated that in 1952 property in Class 9 districts, valued at $1.5 million, was saved from loss by fire because these districts had fire protection services that were not available in Class 10 districts (in Oregon, fire protection districts are classified from 1 to 10. Class 1 districts have the greatest degree of protection, and Class 10 districts the smallest).

In Colorado, 25 or more fire districts in rural parts of the state have been organized under recently passed legislation. The statutes permit rural fire districts to finance themselves by mill levies on taxable property by borrowing and by bond issue. The districts are purchasing motor fire fighting equipment to travel over rural roads, and will maintain carefully planned telephone and/or radio communications.

For the most part, these district rural departments are outright volunteer but in some instances limited paid personnel may be employed to maintain the station and drive apparatus. The volunteers may or may not be remunerated for their actual services at fires and/or drills on any one of a number of bases.

2. ***County Fire Protection:*** Many counties in the country maintain countywide fire forces. Some of these, such as Kern and Los Angeles Counties, in California, are practically full-paid operations, using the latest fire equipment and highly trained personnel. They may serve urban as well as suburban and rural communities, the costs for the most part being a county obligation paid for by taxes on county property owners.

Other county protection is provided by combined county paid and various community volunteer companies or departments located through out the county. An excellent example of this is Baltimore County, Md.

Kent County, Mich., has the Kent County Fire Department, organized in 1941 with 15 cooperating townships (now 16). The original monetary outlay was $25,000. The department now has 10 fire vehicles and 1,000 trained volunteer firemen.

In California also, the Stanlislaus County Mutual Insurance Company bought seven fire trucks to be paid for by members of the organization at the rate of 5 cents per $100 of insurance, plus a prorated interest charge of 2 per cent on the yearly unpaid balance.

Not a few authorities believe the full-paid, or part-paid and volunteer county fire department, equipped with modern fire apparatus, and training facilities, and free of political influence, to be the most efficient and economical answer to the county fire protection problem. Their plan would reallocate existing fire departments or companies, and establish new units, the better to provide balanced countywide protection based on actual life and property hazards, rather than political or other preference. In short, they would apply to the entire county the same study and analysis of fire protection coverage and related problems that are today being given city fire departments, and would organize or reorganize the area protection to meet changing conditions and with an eye to future requirements.

By this method they maintain (and having countywide fire protection administered as a single fire force, under jurisdictional authority that represents all elements of the county's fire organizations) maximum efficiency and economy in all branches of fire suppression forces would be accomplished.

Such county setup is most applicable where no large cities are involved. The county fire department program obviously cannot function well if any one city is called upon to bear disproportionately heavy expense and other burdens of fire protection.

3. ***City-Rural Protection Problems:*** Protection of many suburban and rural areas throughout the country is provided by municipal fire departments, both paid and volunteer, on a contractual fee, or other basis. The arrangement is not always satisfactory to either the department providing the protection, or those seeking the protection.

The excuse for such out-of-town coverage advanced by some municipal officials is that the city depends for much of its economic existence upon the suburban and rural areas contiguous to it, therefore as a gesture of good will, if nothing else, fire protection should be extended those areas which otherwise would be left unprotected.

Opposed to this theory is the fact that even where the municipal department installs and maintains special facilities including manpower, for providing such protection, the protection can never be as effective as well organized and administered fire forces established within the suburban or rural area itself. Furthermore, inasmuch as most municipal fire departments are presently underequipped both as to manpower and apparatus for their own needs, they only increase the fire risk by dispatching any of their facilities out of town. Finally, if local area fire departments are established with or without the cooperation of the neighboring city fire department, the entire area is just so much better protected. This is particularly true where mutual aid plans are inaugurated.

It is well to remember also, that in some respects rural fire fighting calls for special techniques and equipment not normally possessed by the average city fire department.

All in all, it would seem that contracting for outside fire protection, whether from an established, efficient public fire department, or even a commercial fire service (there are a

Combustible exposures increase farm fire losses and add to difficulties of fire fighters. Organized rural fire forces may lose building where fire started, but prevent extension of blaze by prompt response with suitable equipment and training. Here it's too late to save farm buildings. Farmers (center) race to release cattle that might be trapped in rear of burning structure. Fire loss was $50,000 in this Claremont, N. H., blaze

Small communities can have big industrial fires. Nearly every hamlet has some storage of flammable liquids, as in Adrian, Tex., where exploding propane tanks touched off fire that destroyed a warehouse (center of picture), hurt four persons

number of such), offers fewer advantages and poses greater hazards than establishing local fire protection facilities.

It can hardly be gainsaid that protection of areas outside the corporate limits of a municipality, including farm property, scattered suburban dwelling, business and mercantile and isolated manufacturing property, or even entire small unincorporated communities, is best accomplished through some sort of local organized fire protection force, equipped with the necessary specialized facilities.

Planning rural fire protection:

The following steps in planning and organizing rural and suburban fire protection may be of assistance to citizens or organizations considering such a move, and to municipal fire officials faced with the question of providing out-of-town protection.

Research. At the outset, some research is called for. It is essential to know whether a rural fire department is possible and practicable in the community or area involved. It is possible that study may indicate some other form of fire protection. The survey should determine, among other things, the area to be served, topographical and geographical handicaps, if any; property at risk (it is essential to find out how many farmers will cooperate); availability of potential fire fighting personnel; existing communications facilities; business and industrial properties and risks; granges and other organizations that may be counted on for cooperation; and existing state and local laws and ordinances affecting fire protection and prevention.

Assemble and Weigh Facts: In line with the foregoing, make a map or diagram of proposed area to be covered, showing roads, railroads, telephone facilities, settlements, water supplies, etc. Identify on this diagram farmers who will cooperate.

Secure copies of the law and procedures for organizing and maintaining a fire department from the county or State's attorney general.

Get from your tax assessor the assessed valuation of taxable property in the area.

Check on necessary and available communications facilities with your telephone company (information on radio for alerting volunteers, dispatching and maintaining control of fire vehicle movement can be secured from the International Association of Fire Chiefs, Hotel Martinique, Broadway at 32nd St., New York, N. Y.). Manufacturers of fire alarm and other communications equipment will cooperate. The communications study should include around-the-clock telephone service.

Estimate the total cost of the program (don't forget the fundamentals of housing, apparatus and equipment, communications, administrative and operating expenses for personnel, etc.).

Outline the most workable method of financing the program. The laws of your state may permit a small tax levy (about 40 of the states now provide for such financing). Be chary about depending solely upon chance donations and contributions.

If the fire district plan is contemplated, decide on the size of the area to be included for the fire protection district. It may include territory within a radius of two or three miles from the fire station of the community in question, if the community is thickly populated, or a radius of eight or ten miles if there are only widely scattered homes or farms. Road and communications conditions are an influencing factor.

Getting Advice: Sound technical help and guidance are essential in planning the program. Consult specialists who have the know-how, and experience. Your state fire marshal, or coordinator (in Texas it may be the State Insurance Commissioner), can help develop your program.

Fire chiefs from nearby communities who have had experience with rural fire protection can assist in determining the type organization and

kind of equipment (apparatus, hose, appliances, etc.) best suited to rural conditions.

The International Association of Fire Chiefs has a vice-president in each state. He would be a good man to contact. Another good source of help is the state insurance rating bureau engineer.

It takes enthusiasm-plus to plan and consummate a fire protection program and system. One live-wire go-getter is better than a large committee on paper.

There are not only "sparkplugs" who will energize such programs, in every area, but there are groups, such as the Grange, the 4-H Clubs, American Legion Posts and other service groups ready to cooperate if given a clear-cut plan, policy and program. And don't forget any local or area newspaper, radio and TV stations; favorable publicity is very beneficial.

Getting Program Adopted: After all facts are assembled and weighed, and the promoters are in agreement, call a meeting of the rural people in the area to consider adoption of the program. The program you adopt may recommend any one of the three types of protection previously described. Elaborating further, the following essentials should be considered:

1. If an incorporated rural fire protection district, supported by and administered by an elected board of directors, the board should be empowered to establish, or to contract for fire department services of another fire department (viz: a nearby city).

2. If a township or county fire department, it may have to be supported by general or special taxes, and administered by local officials who are empowered to establish or to contract for, fire department services.

3. If a voluntary association or organization, preferably incorporated, supported by governmental and private donations, and administered by elected officers, the latter should be empowered to establish a volunteer (or part paid) fire department, to contract with nearby city or areas for service if desired, or to buy apparatus to be placed in a selected community for use by the association as need be.

As said, the most desirable type program is the tax-supported one. If a voluntary program is planned, it should be incorporated to free members from legal liability. This is necessary even if the organization may carry public liability insurance to cover property damage and injury to others caused by fire fighting apparatus, and workmen's compensation insurance to cover injury to firemen.

Details of response (answering calls of different kinds, schedule of charges, of any, for calls within the area) will depend upon the facts disclosed by the study, and the conclusions arrived at together with the technical assistance of experienced counsel. Another important point also, is that of command and responsibility.

Putting the program into operation:

In general, to render satisfactory service a rural fire department must consist of the same fundamental facilities that go into the make-up of the municipal fire service, namely:

1. Adequate, properly organized, well trained personnel, with good leadership and the necessary personnel equipment.

2. Proper housing facilities.

3. Adequate communications.

4. Apparatus suitable and adequate for the service it must give, carrying the necessary equipment for all operations necessary to save life, and control and overhaul fire.

5. Ample records of operations; fire fighting facilities available (locally and on mutual aid basis); district and property covered, including a proper inspection program in connection with the compiling of such records.

6. Necessary maintenance of apparatus and equipment.

Personnel: The manpower problem can be serious in the case of rural and small town fire departments, particularly where dependence must be placed on volunteers. Even in sizable communities, males capable physically and mentally of becoming trained firemen are hard to come by. And the more thinly spread the population, the greater the difficulty in securing and holding the fire fighter.

Where paid or part paid departments are operated, the manpower problem in some respects is less acute, but in most rural fire fighting where it is necessary to depend upon volunteers, their selection, cultivation, training and direction constitutes probably the most important problem, of non-urban fire protection.

It is generally found that in order to get a response of at least five men with a piece of apparatus (or to mobilize them at the scene of the fire) it is necessary to have a minimum of at least twice that number on the roster of the unit.

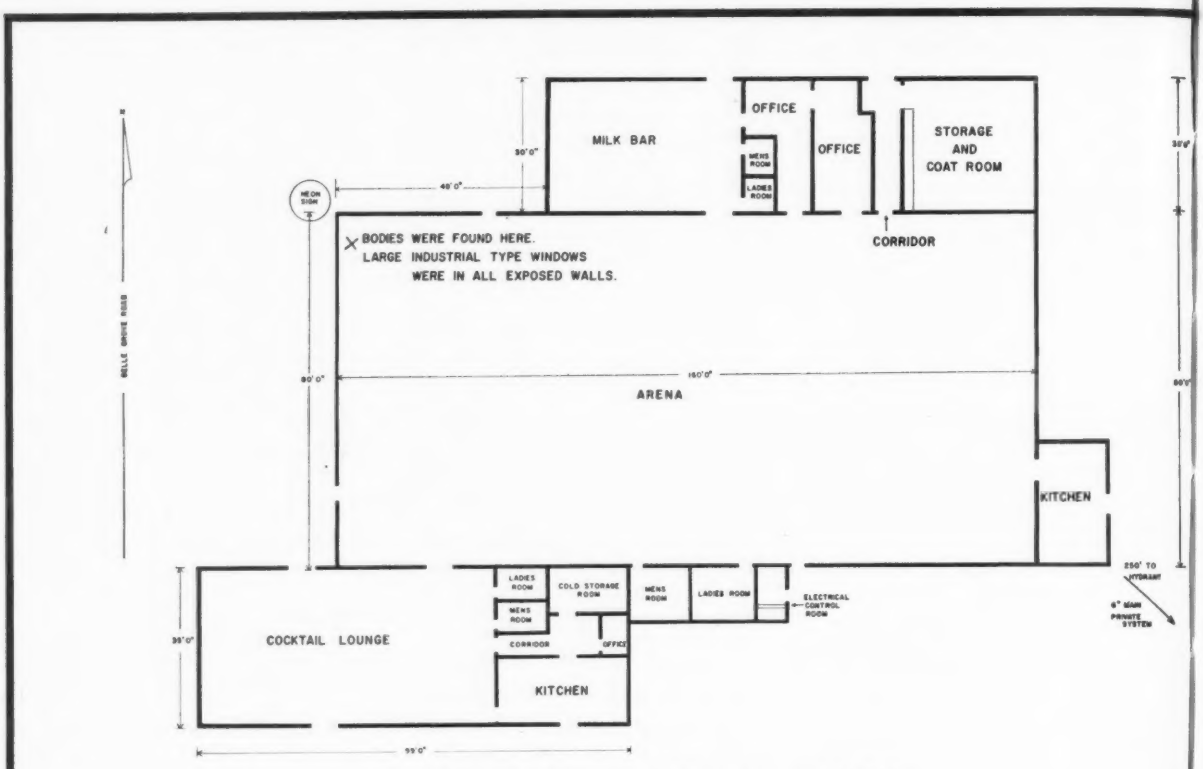
Needless to say, where rural fire protection service is assumed by a municipal volunteer or call department, assignment of men should be specifically arranged so that manpower available for city protection will not be entirely depleted while rural alarms are being responded to. Likewise, if there is any way of providing for selective response, i.e. specific units for specific emergencies, where more than one rig is maintained, so that some fire protection forces will always be left in quarters, this is advisable.

In the case of paid departments, obviously the minimum number of men available for rural response will be small. In most district and small community fire departments, it is rare to see more than two men responding on a fire rig. It is true, under these conditions, dependence must be placed on farmers, even untrained hands. Some such departments require that on all working fires off-shift men report either to the fire, or to headquarters. These men can be summoned by audible public signal, or by telephone or radio notification at their homes or places of business.

In some areas where farm fire protection is furnished by a unit of the nearest public municipal fire department, the following system is in effect: The rural district is divided into four or five sections and five or more farm firemen appointed in each. All firemen have telephones and phone numbers are posted at the telephone exchange.

Continued on page 344

Farm ponds located near roadways and farm properties are good insurance against lack of water for fire fighting. They cost little and are easy to maintain, even in winter



Ground floor plan of Anne Arundel County Amusement Auditorium

A Fire Engineering Special Report

Church Supper Fire-Panic Brings Death to 11, Injuries to Over 200

A holocaust of major proportions was narrowly averted in January when fast-spreading fire and ensuing pandemonium threatened to trap over 1,000 persons attending a church oyster roast in Anne Arundel County, Md., amusement auditorium. Heavy contingents of firemen and first aiders faced numerous handicaps. Fire a lesson in regulating hazards of places of public assembly.

FIRE BROUGHT a ghastly conclusion to an afternoon of merry-making at the Arundel Park Auditorium, 4901 Belle Grove Road, one-half mile south of the city of Baltimore, in Brooklyn, Anne Arundel County, on Sunday, January 29, 1956. Ten women ranging in age from 26 years to 70 years died in the fire. Later a man succumbed to burns received while trying to aid those caught in the flaming area. He was Andrew Brady, a retired fireman of the Baltimore City Fire Department. He was employed by the Anne Arundel County Police Department as a special officer, and the party was to be his last duty assignment. It was.

The affair was an oyster roast sponsored by the Holy Name Society of the St. Rose of Lima Catholic Church in Brooklyn, a community of approximately 40,000 persons just south of Baltimore on the main highway to Annapolis. The church rented the arena on a one-day basis. Approxi-

mately 1,200 tickets were sold for the dance and supper and about 1,100, including some 50 church workers, were there at the time of the fire.

The auditorium is owned by the Arundel Park Corporation. It was built in stages, beginning about a decade ago, and it has variously served as a small amusement park, an ice skating arena, a bingo hall and was a popular center for oyster roasts and crab feasts, indigenous to the Chesapeake Bay area. It was northern Anne Arundel County's biggest covered floor area for public use, with a surface measuring 13,000 square feet in the main auditorium. The structure was on the fringe of a thriving residential development known as Brooklyn Park and in the center of a growing business and commercial district.

East of the property is a sprawling tank truck terminal, specializing in transporting gasoline, asphalt and other petroleum products. The auditorium itself was practically surrounded with large parking areas sufficient for 500 vehicles.

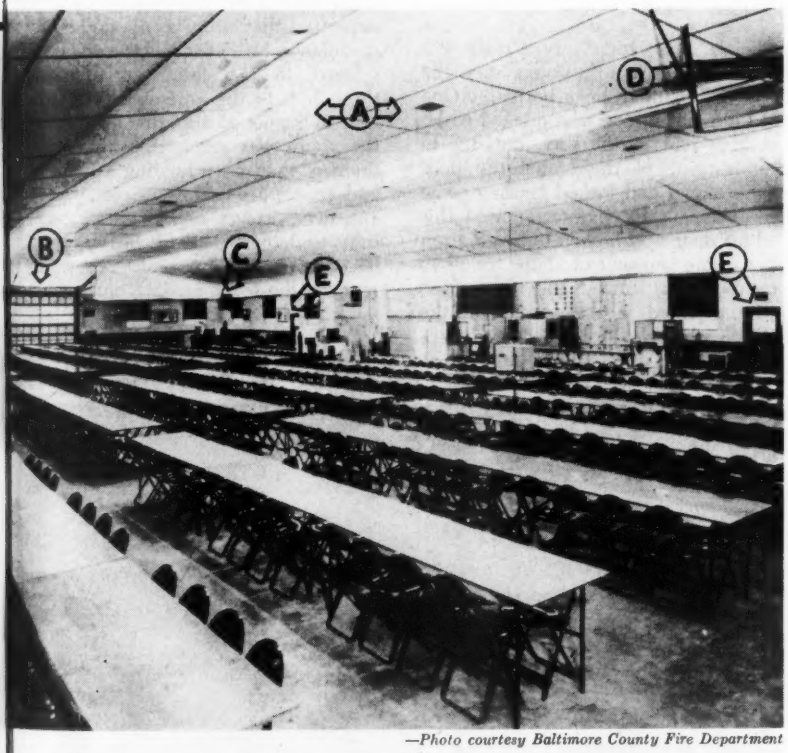
Vulnerable roof and false ceiling

The original arena section of the building, covered by an arched truss roof, measured 160 feet by 80 feet. To this had been added numerous lean-to structures consisting of a milk bar, offices, restrooms, cloakroom and storage space on the north, measuring 113 feet 6 inches by 30 feet; a cocktail lounge, kitchen, restrooms, cold storageroom, office and other space, measuring 135 feet over-all on the south side, and another kitchen measuring 16 feet by 28 feet, 4 inches on the eastern end of the building. Including these additions, the over-all dimensions were: Length 205 feet, 6 inches by 145 feet width. The arena was of "quonset" or hangar-type, construction, the roof arching over the entire large central hall without supporting columns. The roof structure was wood on metal and wood arch supports. It was constructed of ⅞-inch tongue and groove lumber covered with tar.

Extending the entire length and width of the arena was a false accoustical ceiling composed of ⅝-inch cellulose fibreboard having a corn-husk base and highly combustible. Fluorescent lighting fixtures were channeled in this ceiling which at its highest point over the center of the hall floor measured 18 feet. The ceiling was supported from the lower section of the roof truss which in turn was bolted to plated pilasters.

The dead space between ceiling and arena roof measured 11 feet by 160 feet at its highest point, tapering to nothing where it joined with the supporting cement block side walls and truss. It is theorized by some that, over the years, this concealed space might have accumulated quantities of dust and dirt, together with oily, greasy residue resulting from the many "bakes" and "roasts" for which the place was known. Certainly the fire had its spread, if not its origin, in this area.

Numerous changes and alterations to the building since its erection brought corresponding changes in the electrical installation. Lavish use was made of neon lights and signs. The hall was heated with six overhead blower type gas-fired heaters, individually vented.



—Photo courtesy Baltimore County Fire Department

Interior of Arundel Park Auditorium before the fire, showing (A) composition false ceiling and lighting arrangement; (B) garage type doors not primarily intended as exits; (C) overhead circulator heating unit; (D) raising mechanism for garage type door outside right of picture; (E) some of smaller exit doors. Table arrangements varied according to the occasion. At time of fire center space for dancing was surrounded by tables similar to those shown, but smaller. Note arrangement of concessions along far wall, windows (with curtains drawn)

Exits and entrances

It is said that the exits, seven in all, met the County's fire regulations. Two of these exits consisted of 12-foot garage-type roll-up metal doors, one each located at the east and west ends of the building.

The main entrance to the auditorium was reached from the north parking area through a corridor alongside the main checkroom. Another entrance led from this parking space through the milk bar (six-foot entrance doors). Neither of these openings, it will be noted on the diagram, led directly into the arena from outside. Each outside entrance or exit had a corresponding opening in the auditorium proper. Another exit opened on the south parking lot and this was reached in turn through the cocktail bar. Two smaller doors led from the cocktail bar, one to a corridor and the other into the kitchen. These indirect avenues of egress were reportedly not much used by patrons.

Still another exit led from the southeastern corner into a fenced area adjoining the south parking space. It is believed few escaped through this because it was practically at this point that the fire started.

As indicated on the diagram, it will be noted that bodies of all the victims were found at the Belle Grove Road westerly end of the building, farthest away from the point of start of the fire, but in a section having no exits other than the large overhead, roll-up door, which it is said partially failed as a means of exit.

Panic followed the usual pattern

From the evidence at hand, this tragedy followed the pattern of so many others, where people attempted to leave the threatened building by the

Volunteer firemen clearing out window openings. Windows at this point were higher than at other points of building and made escape by that route more difficult. Note type of concrete block and trim construction

same avenue through which they entered it. Also, there was the same sort of delay in attempting to gather up personal belongings, and to pick up wraps at the checkroom. The evidence indicates there unquestionably was a serious jamming at the entrances of the checkroom.

It has also been established that further confusion was caused by people who, although once safely on the outside realizing that someone in their party was missing, went back into the burning building. Many people who had gained safety outside, it is said, returned inside for valuables such as pocketbooks and bags which they left on their tables. This "crowd reaction" also has been demonstrated in similar disasters.

A further contributing cause to confusion, panic and injury was the large number of tables and chairs which were pushed over in the excitement, blocking aisles of movement. One woman witness stated that she tried to get out of one exit and was unable to do so due to the tight packing of people. She stepped back and sat down on a chair and waited until the group thinned and then was able to walk out without any trouble.

Even without the large garage type doors, which were not considered as normal exits, it is believed by many officials that there were sufficient means of egress to accommodate the crowd, had there been no panic. One of the garage doors was opened early, at least part of the way, but due to the surging of the crowd the door came down and locked causing some confusion. Later it was reported this entire door was broken outward from the inside pushing of those trying to escape. It is conceivable that those who perished at that section of the hall were among those who were foiled in a misguided attempt to gain the outside through one of these exits.

It appears that death resulted not so much from the fire itself as from panic, where the people, including the ten victims, lost all reasoning. The dead were piled close to the one big opening and the evidence indicates they were confused and went to the wrong part of the building, where the heat and fumes overtook and felled them before the searing fire reached them. They bore no evidence of having been trampled.

Fire control and rescue operations

Fire protection for Brooklyn is provided by the Brooklyn Community Volunteer Fire Company under command of Chief Joseph Neill, assisted by Deputy Chief Frank Homberg, both of whom engaged in the fire fighting operations.

Fire alarms are handled through the Police Department, which maintains a 24-hour watch service; the volunteers are alerted by a coded audible alarm. At about the time an employe of the auditorium was telephoning the fire department, but before firemen were called, an Arundel County Police car passed the scene and the officer was quick to notify his headquarters of the emergency. He requested that every available county ambulance be called. This news was relayed to the fire company and through it to the various services.

It so happened also, that at the time the alarm was received by Brooklyn firemen, they were holding a meeting and no time was lost in responding. However, it was necessary for some units to detour to escape heavy traffic. The first Brooklyn unit reportedly reached the scene at 5:11 p.m.

Before leaving quarters, Chief Neill, who was informed about the serious-

Streams brought to play from outside as fire fully involves hall after roof had fallen in. Note different types of windows, some showing evidence of efforts at escape, and small exit door (far right)—*Photo courtesy Baltimore County Fire Department*

ness of the fire, had a call put through for mutual aid from Lithicum Volunteer Fire Company, which sent one pumper; Ferndale Volunteer Fire Company, which dispatched two pumpers, and Glen Burnie Volunteer Fire Company which sent one unit. Brooklyn responded with its full force of three pumpers. Radio was used in making all calls for assistance from Anne Arundel County forces, which have a prearranged mutual aid plan.

Parking posed added problem

As will be noted in the diagram, practically the entire auditorium was surrounded by parking areas. There was reportedly room for at least 500 cars and it is said the paved parking areas were filled to capacity at the time of the fire. Machines were parked against the building two rows deep.

Some small openings were left between parked vehicles for passageways, but these were not large enough to permit movement of fire apparatus. In addition, most of the parked vehicles were locked. Persons escaping from the burning building in many cases attempted to get their cars out of the immediate area, thereby increasing the confusion. Many cars were backed into travel-ways without regard to fire apparatus causing hopeless blockades.

This confusion made it impossible for firemen to make fullest use of the nearest hydrant to the fire, a private hydrant on a six-inch main, located 300 feet from the rear of the building. No pumper could be connected up to it. Some 250 feet of 2½-inch hose, however, was laid by hand to this hydrant and the line operated at hydrant pressure until the space was cleared. It was all of 20 minutes before this was accomplished and a pumper could be connected up.

Crews of men were put to work breaking the windows of locked cars in order to facilitate their removal. This was a slow operation and the congestion of cars around the building was so great that it was impossible in the early stages for apparatus to get near enough to even operate booster lines on the fire. This situation caused more equipment to be called in than would otherwise be needed.

Fire fighters were further handicapped by the rush of thrill-seekers, and friends and relatives of those believed to be caught in the burning building. This reached its peak after television and radio stations went on the air with the announcements of the disaster (which in somes cases were highly exaggerated).

Fire rigs, ambulances and emergency vehicles responding to calls in many cases encountered serious delays and it was not until extra state and other police and law and order forces went into action that the problem was relieved. As Chief Harry Klasemier of the Anne Arundel County Fire Prevention Bureau described it, "Citizens apparently mobilized faster than the fire forces did."

Two pumpers stretched to a gravel pit about 800 feet distant and later responding units hooked up a relay operation between an Anne Arundel hydrant (six-inch main) on Fifth Avenue, approximately 8,000 feet from the fire. The next closest hydrant was located at Belle Grove and Sixth Avenue 2,340 feet away.

First responding firemen encountered many persons who had escaped, some of them badly injured and others in a complete state of shock. Out of the welter of confusion it was difficult for firemen to secure any accurate information on missing persons. The volunteers, handicapped by people attempting to move their cars, were further delayed by others who hung onto them begging them to locate and rescue relatives or friends. As one fireman put it: "People involved in the fire were staggering all over the place in dazed condition; many were badly cut, other burned. Nobody seemed to know how many were trapped in the blazing building."

Some Brooklyn firemen were detailed for rescue work, others to get water on the fire. Within 25 minutes after the alarm, the roof fell in. From the start, however, it was impossible to make any entrance into the blazing structure. All fire fighting had to be done from the outside.

It was different with first aid. The services of available first aiders and doctors were urgently needed. Over 200 persons required some medical attention; many of them were gravely hurt. As ambulances continued to arrive from all over Anne Arundel County and other areas, a shuttle system was set up to speed the injured to Baltimore City hospitals, which soon were taxed to their limits. All available off-duty doctors and nurses were summoned. The Red Cross was called on for additional whole blood and sent 200 pints of it and 100 pints of serum albumin from Washington.

It was about 7:00 p.m. before the ruins had been cooled sufficiently to permit fire fighters to begin their search for victims. By the light of floodlights and flashlights, in a drizzling rain, the rubble and blanket of ashes were picked over. In a corner near the northeast end of the building the huddled charred bodies of nine victims were found. The tenth was later located about 40 feet away. All were burned almost beyond immediate identification.

30 pieces of apparatus; 300 firemen fight fire

All told, about 30 pieces of fire apparatus and over 300 firemen responded from Anne Arundel County volunteer fire companies; two came from Baltimore County, Chief Urban and Deputy Chief Lee Cockey; three companies (two pumpers and one ladder) were dispatched from Baltimore City by Chief Michael Lotz. In addition, there were 14 ambulances that responded from various volunteer companies in Anne Arundel County, and the Box 414 coffee wagon from Baltimore City. Mobilized also were Civil Defense, Red Cross and other volunteers; County, and State Police and about 100 men from the 35th Anti-Aircraft Battalion who, with units of the National Guard, helped to control crowds and set up roadblocks.

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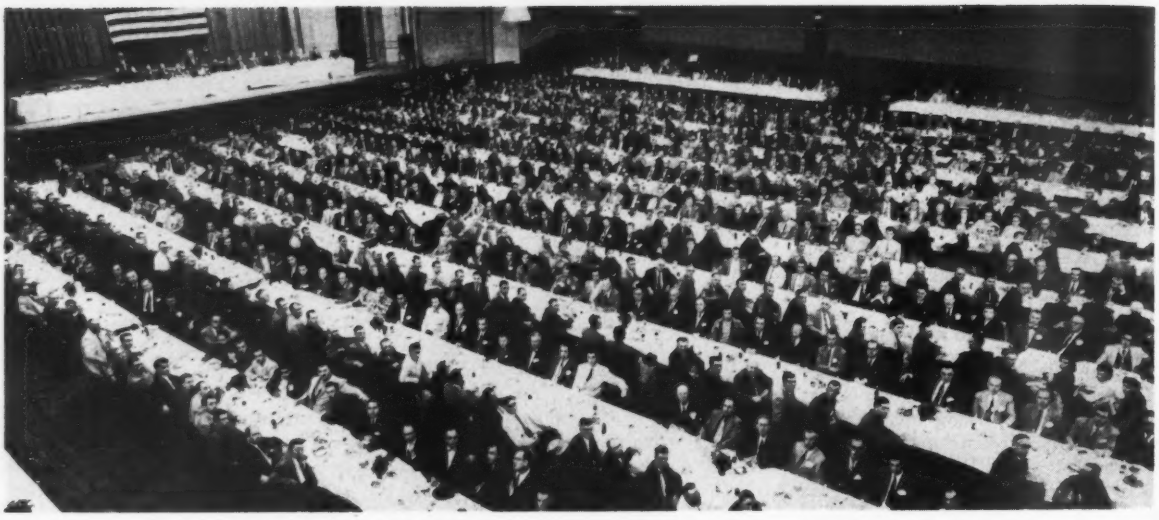
Discarded clothing mute evidence of frenzied escape. Picture shows type of concrete-block and brick wall construction and metal casement windows, many of which were broken out in frenzied efforts to escape flames



Memphis firemen fed delegates, 1,500 at a crack—*Memphis Commercial Appeal photo*

OPERATION F. D. I. C.

—Like Topsy, It Just Grew!

Record-breaking 28th Annual Conference focuses attention on uniquely efficient training facility that has inspired thousands of key personnel in and related to the nation's fire service to improve firemanship techniques and strategy. This is the story of a man, a little black book, an off-limits traffic light, a little group of zealots, and an incomparable fire department, that combine to wage and stage the Fire Department Instructors Conference.

THE FIRE DEPARTMENT Instructors Conference is a peculiar anomaly. It is not an organization, per se, yet it functions as such. It is not an association of men with a communal thought, yet its adherents go out of the way to associate with each other. It is an entity without portfolio. It has no officers, no rules, no constitution or by-laws, yet it functions smoothly and efficiently. It charges no dues, requires no accounting of finances, yet it is self-sustaining and is always solvent. Where the financial support comes from is known only to a few—and they won't talk. Yet it is known that FDIC's chief sponsors, the Fire Prevention Department of the Western Actuarial Bureau, Chicago, and the Memphis Fire Department, find the ways and means to perpetuate the Conference year after year, notwithstanding the persistent growth in attendance.

How FDIC got its start, back in 1928, with no more idea behind it than that training in firemanship would have to get above the playground level, is too long a story to be told here. The policies, plans and programs originally laid out have, over the years, become a reality. The inscrutable, intangible, Fire Department Instructors Conference is a very definite entity, at least for four days out of each year when a swelling flood of municipal fire service personnel, safety engineers, public officials, officers of fire service organizations, insurance industry and federal government, congregate in Memphis, Tennessee.

Then, under the aegis of Richard E. Vernor, chairman since its founding, aided and abetted by a tight little team of zealots, each letter perfect in the part he plays in the Conference-drama, together with a fire department that has rehearsed its stellar role for over 20 consecutive years, the Conference flashes into life.

Without benefit of promotion, propaganda, and politics, FDIC goes its swift appointed pace from opening invocation to final remarks.

High Pressure, High Power, High Purpose

The 28th Annual Fire Department Instructors Conference, following precedent, started on the dot, maintained its fast pace on split-second timing, from 9:23 a.m. sharp on Tuesday, February 21 to 4:30 p.m. Friday

the 24th. During those four kaleidoscopic days, over 2,000 registrants, including the top echelon of the nation's fire service, sat and stood spellbound to assimilate a program that included a total of 47 topics, presented by some 100 top-flight fire chiefs, fire instructors, educators, public officials, insurance and other specialists from 32 states.

The series of sessions that paused only long enough for the delegates to eat their fill of lunches prepared and served en masse by Memphis fire fighters, even encroached upon the nights.

A far cry these 2,000 and more seekers after information and learning from the little conclave of eight persons from ten states who called to order the first FDIC!

On the surface it all looks so simple. From the time Chairman Dick Vernor opens his little black book, checks the large economy size electric clock, and the Yellow, Red, Green Traffic Signal and says: "*We gather here in spirited good fellowship for one purpose only; that's to help each other to do a better job,*" to the closing song "America," and the prayer by Robert F. Hamm, preacher-fireman-rating bureau worker, everything clicked along like the modern well-tooled, trained fire alarm signal communication system. But all this simplicity was the result of a lot of doing, and dreaming. The agenda was sorted and sifted from over 250 topic suggestions, reviewed and studied by a 28-man program planning committee from 11 states. And most important of all, the four-day affair rolled smoothly along under the capable direction and operation of what for want of a better term we will call them Dick Vernor Team, in which we include the Memphis Fire Department from greenest proby to veteran Chief John Klinck.

To grasp the mechanics of this operation it is necessary to go back to the closing of the 1955 FDIC. Even before all the enrollees had departed for home, and the 'props were packed away and Conference post-mortems held, the pilot and his crew were giving thought to this year's production.

Perhaps the best way to set down these thoughts and actions is in some sort of sequence.

One of the first details decided is the dates of the next Conference. In this case, Fire Chief Klinck has invited the gathering to convene February 19-22, 1957. This early determination insures adequate housing and meeting places.

One of the problems of the Conference is the duplication and dispatching of the Conference papers to all registrants. This means the publication of some 20 different texts, 52,000-plus copies each. Gathering and collating these data into sets, and mailing them with the proceedings which are meanwhile being prepared by Messrs. John Barman and Harry Wolff of the staff are in themselves time-consuming and costly jobs.

Just to fill in the idle moments of the rest of the staff, the detail records of the Conference must be gone over. But here again, system and experience triumph, and before vacation time arrives, the records are brought up-to-date and preliminary plans for the ensuing year's Conference are under way.

Along about October, the heavy work begins. A list of key men in each state is maintained and each is asked to check on and revise the invitation list for his state. Invitations giving advance details of the next Conference are later sent all persons on this revised key list. This detail is a responsibility of the Western Actuarial Bureau staff.

Program under way by October

By mid-October the first steps toward building the program for the year are taken. Contrary to popular belief, the FDIC program, which is heart and soul of the Conference, is not arrived at by guess or personal preference. The ideas and suggestions of some 250 carefully selected persons are solicited. These are painstakingly studied and in late November the staff reviews, classifies and duplicates all replies. In 1955 there were over 250 suggestions received for the 1956 program. From the importance of the subjects suggested, as measured by duplicated recommendations, timeliness and other factors, a tentative program is arbitrarily arrived at.

About December 5, this tentative program gets a third degree from a

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Control of lumber yard fire demonstrated by Memphis Fire Department for benefit of 1956 F.D.I.C.—*Memphis Commercial Appeal photo*

Some prominent figures in attendance at the 1956 F.D.I.C. Left to right are: Harry H. Wolff, Field Officer, Fire Prevention Department, Western Actuarial Bureau; Arthur Spottswood, Chief, Fire Prevention Bureau, Minneapolis, Minn.; Chief Donald S. Charles, Second Vice-President, I.A.F.C., Charlotte, N. C.; Chief Wayne E. Swanson, First Vice-President, I.A.F.C., Rockford, Ill.; Richard Vernor, Chairman, F.D.I.C.; Chief William Fitzgerald, President, I.A.F.C., Seattle, Wash.; John P. Redmond, President, I.A.F.F.; George J. Richardson, Secretary-Treasurer, I.A.F.F.; Chief Fire Marshal Albert Peterson, Chicago, Ill., and Chief R. C. Malmquist, Minneapolis, Minn.

Continued from page 319

twenty-eight-man program committee. These judges come from nearly every walk of the fire service and fire protection and prevention fields in about a dozen states. They spend an entire day refining and overhauling the program to a set status. The Conference Chairman is then instructed to come as close to this final selection as possible, with authority to substitute where necessary.

While the Chairman is keeping the mails hot, the Public Information Secretary, Henry Ritgerod, and Fire Chief John Klinck are daily informed as to acceptances and changes until there is a written confirmation from all on the program. Then and only then, does the program go to the printer, after which it is mailed to the invitation list and those who register in advance, as well as to all speakers, officials, and the like.

Time is of the Essence

If there is anything the Conference program is famous for, it is its timing. That is as important as the topics covered, and even the speakers who cover them.

Most of the guest speakers have run the gamut of the "stop-and-go" procedures and know how adamant the chairman is when it comes to beginning and ending sessions. Usually it only requires the yellow warning light to set the speaker to shuffling his papers, and speeding up his delivery! Few ever get the red light, let alone the loud bell that definitely declares that time is up.

The Chairman sends a special questionnaire to all program participants explaining the Conference timing and the exact time such will be allowed. The questionnaire asks (a) three copies of the addresses to be sent to Public Information Agency; (b) special staging required for demonstrations; (c) slides or movies to be used; and (d) requests for biographical material for the presiding manual, that mysterious little black book which is the Chairman's "Conference Bible." The information secured by this questionnaire is relayed to the respective committees or officials in charge of such details, by the Chairman.

The split-second timing springs in part from this little black book. Without it, there could be only a poor facsimile of a Conference. With it, the Chairman has all details of the Conference, the sessions, topics, timing, speakers and introductory material at his finger-tips.

Memphis F. D. plays leading part

One of the most important of these preassigned tasks is that undertaken by the Memphis Fire Department. It has twelve organized committees. They are: Transportation; Food; Movies; Photography; Communications; Decorations; Entertainment; Registration; Sergeant-at-Arms; Radio and TV; Reservations; House, not to mention Emergency Committee.

Liaison between these committees, the Fire Department itself, the auditorium stage manager and the Chamber of Commerce, is a responsibility of Emmett Cox, Vice-Chairman, who makes three advance trips to Memphis to check on the Conference's countless details. He also produces the "Follies" show (the single bit of entertainment of the Conference) and, arranges for duplicating of the Conference papers. His job is a whole story in itself, and can be summed up thus *"Nothing is left to chance."*

To describe further the efficient little staff, Conference Secretary, Capt. Harry Wolff, is in charge of records, including cards for some 6,000 registrants over the years; indexed subjects; speakers; photos; conference papers, etc. He and Assistant Secretary John Barman, Missouri Inspection Bureau, compose the Proceedings which are prepared for duplication by Chairman Vernor's efficient Secretary, Miss Mary E. Tridle. He also is responsible for the official recording (every word received over the mikes is recorded for posterity).

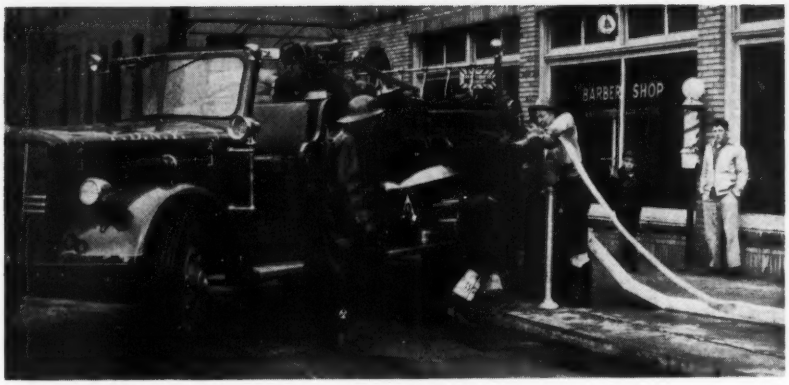
Inasmuch as every registrant cannot be kept on the invitation list, over the years Miss Tridle has a continuing job of making the necessary changes to be certain that at least the registrant's organization remains on the list.

A staunch contributor to the Conference's success is Henry (Hank) Ritgerod, of L. V. Martin & Co., Little Rock, Ark., who acts as Public Information Secretary. He is aided by Carl S. Smalley of the Arkansas Inspection and Rating Bureau. Between them, they handle the important contacts with press, radio and TV, the preparation of news releases, and daily summaries of Conference goings-on. They are busy and essential members of the FDIC "team." There are others, who give unselfishly of their time and effort, men like L. F. Hollan, FDIC Historian, whose spectaculars, chronicle the yearly advance of the Conference. But in the final analysis, it is the small but zealous WAB Chicago Staff named herein that sparkplugs, FDIC, always under the inspirational guidance of Chairman Richard E. Vernor.

Sparkplugs of the Food Committee—Chiefs Dooley and Butcher

OVERHAUL AND SALVAGE . . . IN THEORY AND PRACTICE

By ROI B. WOOLLEY



One of the 20 pumpers dispatched by the New York Fire Department to Danbury, Conn., during costly 1955 flood, getting set to operate eductor in the extensive flood dewatering operations in that city after flood waters had subsided —*Photo courtesy Tom Magner*

PART XII

Removing Water from Buildings— Dewatering Basements Presents Problems

THIS CHAPTER is a continuation of Part XI in which emphasis was placed on removing water from areas below the fire, but not from basement or cellar. In this article we discuss the problem of dewatering those below-ground-level areas with some consideration also, of the part played by elevators and elevator shafts.

The reader is urged to bear in mind the general recommendations on removal of water from buildings contained in the preceding chapter, in his consideration of the following.

Actually, it does not matter how the water came to accumulate in the basement or sub-basement of a building, whether as a result of fire extinguishing operations carried on above ground level or in the sub-surface levels, or sprinkler failure. The main problem is one of dewatering the accumulated deposits.

True, where fire is fought above ground floor, some salvage operations of a flood-preventive nature can be carried out in the sub-surface areas where conditions make the maneuvers safe for the salvage personnel. Safety of life in any and all salvage operations comes ahead of saving of property. But in general, whenever any large scale fire extinguishing operations are undertaken, it is quite conceivable that water may accumulate in sub-surface areas faster than approved salvage dewatering operations can remove it, or prevent its entry into the areas.

Where personnel, because of hazardous conditions, are unable to operate in these areas, and open drains or otherwise prepare to forestall excess water accumulations, it is a foregone conclusion that water removal will be a major operation. This supports the contention advanced in the preceding chapter than under any and all conditions, dewatering operations should begin at the earliest possible moment,

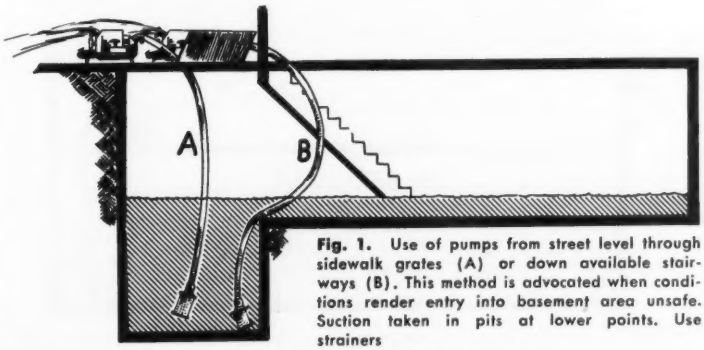


Fig. 1. Use of pumps from street level through sidewalk grates (A) or down available stairways (B). This method is advocated when conditions render entry into basement area unsafe. Suction taken in pits at lower points. Use strainers

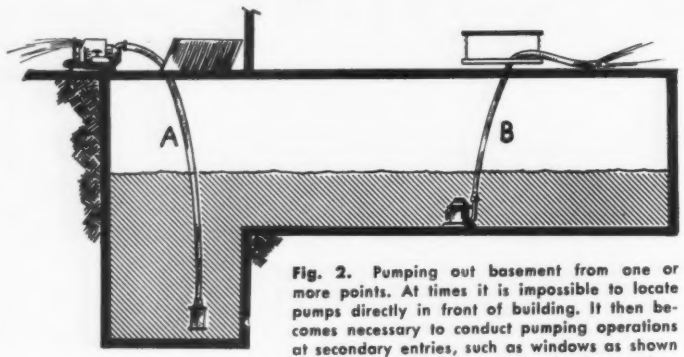
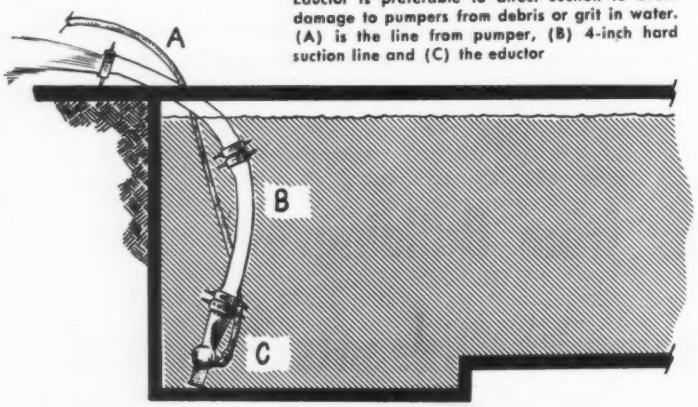


Fig. 2. Pumping out basement from one or more points. At times it is impossible to locate pumps directly in front of building. It then becomes necessary to conduct pumping operations at secondary entries, such as windows as shown (B) and any available surface openings (A)

Fig. 3. Eductors are employed when excessive amounts of water deposits are encountered. Eductor is preferable to direct suction to avoid damage to pumpers from debris or grit in water. (A) is the line from pumper, (B) 4-inch hard suction line and (C) the eductor



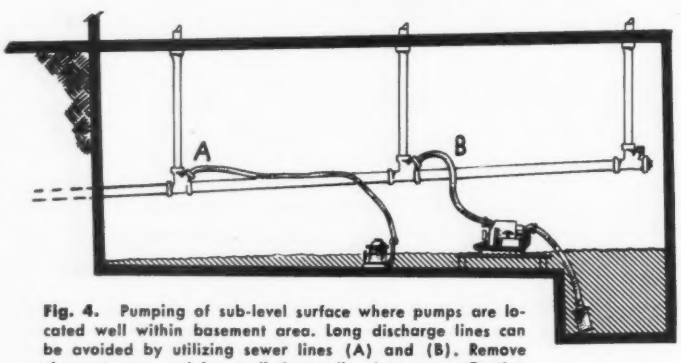


Fig. 4. Pumping of sub-level surface where pumps are located well within basement area. Long discharge lines can be avoided by utilizing sewer lines (A) and (B). Remove cleanout caps and insert discharge line into same. Caution must be used to avoid carbon monoxide fumes from gas driven pumps wherever used inside building

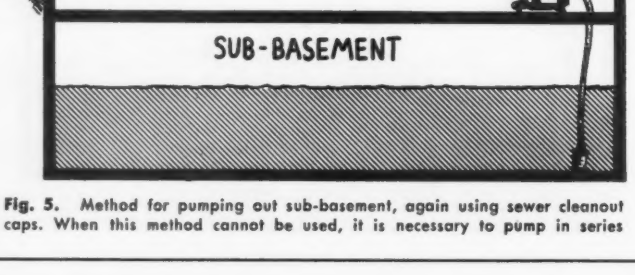


Fig. 5. Method for pumping out sub-basement, again using sewer cleanout caps. When this method cannot be used, it is necessary to pump in series

even if such operations are only of a preventive or precautionary nature, in anticipation of possible large scale water accumulation in these below-surface levels. This presupposes, of course, that the fire is so located that salvagemen can enter the basement or cellar to (a) determine the equipment and/or stocks that may be damaged by water deposits; (b) shift or remove such of those stocks as may be possible; (c) prepare drains or other outlets to carry off the possible deposits.

Sub-surface fire salvage problems

Where the fire has originated in the basement or sub-basement areas, two salvage situations may arise. Either the fire has extended through-out the entire basement area or (2) the fire is confined to one portion of the basement.

When the fire has extended throughout the entire area, or the nature of the fire wherever it is makes the basement unsafe for operating personnel, salvage is generally confined to control of water that may be penetrating through walls into adjoining basement properties.

Control of such water may be possible by using stock covers as blocks and runways to confine and direct the water to available drains or other outlets. Either that, or pumping operations may be necessary if no drainage facilities are present.

Breaching basement walls may be called for

When conditions are favorable, it is sometimes advantageous to breach cellar walls at a point where the water can easily be directed to drains, or pumped out of the building. This method is particularly effective when the penetration of water through walls is taking place at a number of points.

Regardless of these measures, as soon as conditions permit, entry should be made into the fire building and the removal of water started immediately.

When fire is confined to one portion of the basement and conditions permit entry of personnel, the first action should be to hold the water to the smallest area possible by the use of covers as door blocks, and/or the flow of water should be directed to available drainage avenues, using covers as runways. Should the overall depth of water in an area call for it (and drainage facilities be inadequate for the task of dewatering), removal of water should be augmented by pumping.

A word or two about drainage. Few

basements are without drains of some sort, either that, or they have the means for improvising drains, i.e., waste pipes, etc.

The breaking of waste pipes may be necessary, even though the basement is equipped with floor drains, and sump pumps are utilized at low points.

Floor drains are often covered with stock, making them useless or the holes in the drain plates may be plugged with debris so as to render them insufficient to carry off the water rapidly enough.

Sump pumps are rarely of sufficient power and capacity to rid basements of heavy water accumulations fast enough and they eventually become inundated, or clogged with debris and thus become inoperative. Also, any power-operated sump pump or other type water mover may be deactivated by a power shutdown or failure.

It is general practice among insurance fire patrols when fire has reached serious proportions (usually indicated by multiple alarms), and the quantities of water that are, or will be, employed for the extinguishing process are beyond control, to attempt to locate and rupture if advisable, all waste pipe lines. When this is done, strainers should be inserted in openings to insure that debris will not clog lines.

Where conditions make it possible, and safe, efforts should be made to locate pits that are readily available for the insertion of suction lines at street level. Locating such deep points may be a tricky and dangerous business and considerable care should be exercised in such search. If building owners or occupants can be induced to indicate by placards or signs on nearby walls or posts where such pits and/or drains are located, it can be materially beneficial in helping locate them under water.

All water main supply lines, if possible, should be shut down to avoid any prolonged water discharge from broken or ruptured pipes. Also, electrical equipment in the areas, which might be damaged by water should be de-energized. Main switches, however, should not be pulled until and unless the fire forces operating above are notified.

Points for dewatering sub-surfaces

Briefly, here are the more important means of dewatering sub-surface areas such as basements and sub-basements (in addition to the use of exterior or above-ground pumps, eductors, etc.):

1. Built in floor drains.
2. Waste and soil pipes (connected with washstands, toilets, etc.)
3. Connections or openings with adjoining properties (through which excess water may be drained or pumped and thence conveyed to safe points)

Special pump unit

The New York Fire Patrol has a special mobile unit which carries a variety of pumps capable of dewatering buildings, even under the most adverse conditions. Included are the following:

(At 6-foot lift) Two 120 gpm gas pumps

(At 12-foot lift) Two 60 gpm electrical driven submerged pumps

(At 6-foot lift) Four 20 gpm portable electrical driven pumps

(4 to 1, at 10 foot lift) Two eductors (N. Y. Fire Department pumpers are employed to operate these devices)

One 500 gpm pump, mounted on a trailer, which is used to supply eductors or for taking direct suction.

The Unit also carries gas-driven generator for supplying power to electrical driven pumps, and a variety of tools designed to assist in water removal.

Elevator shafts bane or blessing?

In the first part of this chapter we said that water finds its level. In so doing it takes the paths of least resistance, which are usually the vertical arteries, such as stairways and shaftways.

If these arteries or channels for the overflow can be dammed or otherwise blocked to detour the water away from, or out of these channels, and out of the building, or into areas where there is least possibility of water damage, this procedure is recommended. As was pointed out in the case of stairways, this method of shifting the channel by bagging or other means can often be done, but it is not so easy of accomplishment where the vertical artery is an elevator shaft. That is why it was recommended that where possible, waste water should be bagged or dammed on floors or diverted, and if necessary, chuted away from shafts.

At their best, elevator shafts are not the most desirable avenues for relieving floors of surplus water. Even though the most elaborate precautions are taken, and the elevators are rendered inoperable during operations, the possibility of water damage, through its finding its gravity level is always present. It appears to be the unanimous agreement among profes-

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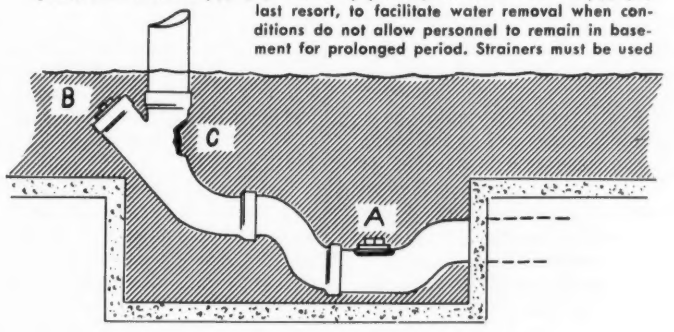


Fig. 6. Sewer line trap, showing points where salvagemen may remove caps on line, according to prevailing conditions at time of fire: (A) preferable point (remove or break cap); (B) secondary point (remove or break cap); (C) last resort, to facilitate water removal when conditions do not allow personnel to remain in basement for prolonged period. Strainers must be used

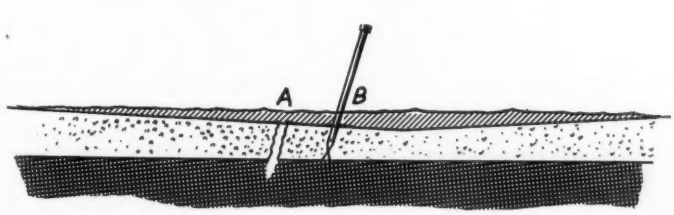


Fig. 7. After pumping operations, low pockets of water can be emptied by drilling holes through concrete floors: (A) first penetration—pin removed; (B) second hole to be placed 8 to 12 inches from first hole

Valley City, N. D., volunteer firemen set up a heavy water fog curtain in the successful effort to prevent extension of the hot fire in the Beeman Block across an 80-foot street. Note how fog pattern is being carried on the 10-12 mph wind
—Photo by Harry W. Moore

Small city fire department

Makes the grade in

Controlling Largest Fire

ON THE NIGHT of January 26, 1956, the largest fire in the history of Valley City, N. D., destroyed what was known as the "Beeman Block" with three stores, ten apartments, an office and meeting hall and damaging adjoining structures. The entire business area was threatened by the blaze, which caused property damage of $202,343.00 before it was controlled by firemen from Valley City, Tower City and Jamestown, operating in 10-7 degrees F. temperature.

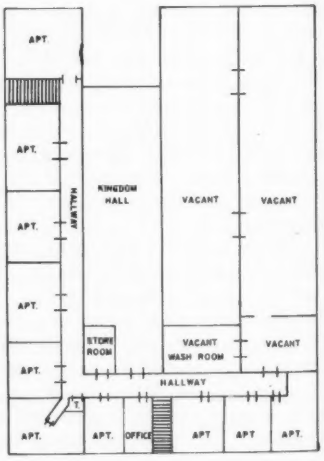
The destroyed properties were the S & L Store, in which the fire reportedly originated; the Valley Furniture Store and the Valley Appliance Store. The three establishments occupied the ground floor and basements of the two-story brick block, built 50 to 58 years ago. The second floors were occupied by ten apartments on the street fronts, and a meeting hall. The balance of the upper floor, over the S & L Store was vacant.

The building was located on the west side of Central Avenue North, Valley City's main north-south artery, between 3rd and 4th Streets. The Valley Appliance Store occupied the corner at Central Avenue North and 3rd Street Northwest as indicated on the diagram, Figure 2. The arrangement of the second floor is shown on Figure 1. The Valley Appliance and Valley Furniture Stores measured 25 feet front by 140 feet depth; the S & L Store 50 feet front and the same depth.

Construction was brick and joist, with no fire wall between the S & L Store and the other two retail occupancies. There were openings in the wall separating the furniture and the appliance stores on the second and the main floors and one in the basement. All openings had sub-standard closures. A fire wall separating the S & L Store from the large Montgomery Ward Store to the north, was in poor condition, with wood members framed into the wall. It had been weakened by a previous fire in 1923. There were exposures in the form of Our Savior's Lutheran Church, across a 20-foot alley to the west, and the Foss Drug Building across 3rd Street NW. to the south. Both Central Avenue and 3rd Street NW are 80-foot thoroughfares.

All told, the buildings involved and exposures were about what would be encountered in the average small town in the Middle West.

The Valley City Volunteer Fire Department consists of 25 men, all volunteers with the exception of the Fire Chief, Ken Raveling who is the only paid employee. Equipment consists of a 1947 Seagrave 750 gpm pumper; a 1936 Luverne 500 gpm pumper, and a 1954 Minnesota 500 gpm pumper. The last mentioned belongs to the Rural Fire Association and is housed and manned by the Valley City Department, although intended primarily



▲ **Figure 1.** Second floor arrangement showing uninterrupted hallways extending throughout both sides of structure; also the ten apartments and vacant areas

Figure 2. Ground floor layouts. Fire originated in S & L Store under Kingdom Hall ►

for rural use. There is also a 1938 Ford ladder truck which carries an assortment of ground and roof ladders and a 1948 Chevrolet panel rig which carries a 2500 watt generator and floodlights. This unit is also used for the department's inspection work.

Total hose carried on the equipment is 2700 feet of 2½-inch and 600 feet of 1½-inch, plus booster lines. The city has ample water supply, 8-inch and 12-inch mains being fed by four 600 gpm pumps. Approximately 1¼ million gallons of water were used on the fire.

Alarm delayed but response prompt

What caused the fire is not determined but the origin is being investigated. It is said to have originated between the first and second floors of the S & L Store. The manager reportedly left the premises at 8:40 p.m. At approximately 8:50 p.m. a citizen saw smoke at both the front and rear of the store but failed to turn in an alarm. People in upstairs apartments were unaware of the fire until the fire siren blew at 9:00 p.m. Yet when the volunteers arrived on the scene at 9:02, the main building was so full of smoke and heat that entrance into the store was impossible and the upper hallways were heavily charged. According to Chief Raveling, "It is fantastic that this (the fire) could build up to these conditions in so short a time . . . the fire is very strange indeed and borders on the suspicious side."

At the time of the alarm, members of the department were holding their monthly meeting at the firehouse nearby and they responded quickly with three pumper and the ladder companies.

Several members of crews of Pumpers 1 and 2, which covered the front of the building, set to work immediately to remove the tenants of the apartments. In this they were aided by citizens. Other members stretched in lines while the rescue work was under way. The department's breathing equipment was used by rescuers above the first floor, and in the rescue operations and in an effort to ventilate the structure, but this proved fruitless due to the construction of the building.

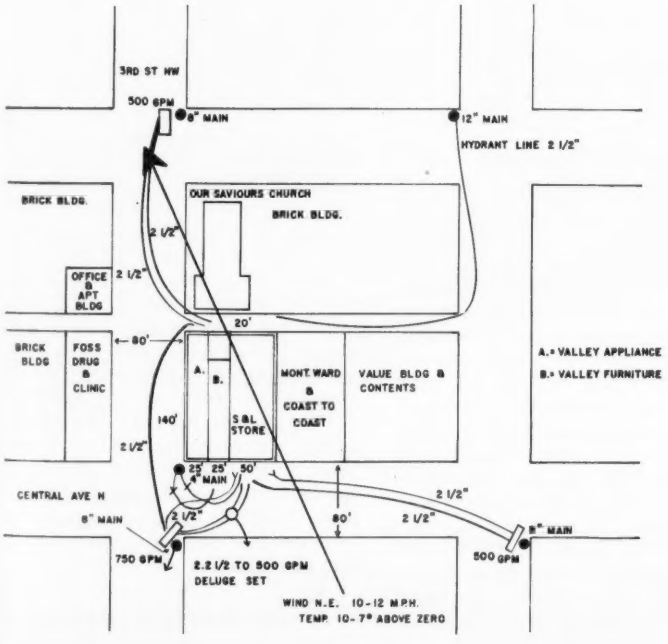
Efforts to operate lines within the S & L Store, at front and rear (where Pumper 4 was stationed) likewise were unsuccessful and the heavy smoke and heat drove out the hosemen at front and rear. Streams were directed on flames visible under the ceiling of the first floor about 35 feet north and west of the front doors of the S & L occupancy and shortly after, the entire southwest area was a mass of flame. This fire penetrated the wood stud wall separating the S & L building from the Valley Furniture and in turn worked through the wall between that store and the Valley Appliance. It was soon apparent that the fire could not be confined to the point of origin in the tinder dry, aged structures.

There probably is no "typical" American community any more than there is a "typical" American small town fire department—or a "typical" conflagration. But there are reasonable facsimiles upon which this special report is based.

Valley City, Barnes County, N. D. (pop. 6851; alt. 1220), has its railroads and highways and its Central Avenue business area, typical of so many Midwest communities. It also has its proportionate conflagration hazards. And it boasts the Valley City Volunteer Fire Department.

This is the account of how its worst fire emergency threatened that community and how it was faced and controlled by a volunteer fire force which, we must confess, rates somewhat above the "typical."

The editors gratefully acknowledge the assistance of Valley City Fire Chief Ken Raveling for data upon which this report is based.



Mutual aid functions

Mutual aid in the area is somewhat of a problem due to the distances between towns and also because the smaller communities have only a single piece of equipment. Jamestown and Nimbledon, N. D., are possibly the only departments that can spare equipment to aid other towns, and

Continued from page 325

here the distance factor is important. Valley City maintains one pumper for country and mutual aid fires.

Immediately the seriousness of the blaze was apparent, Chief Raveling requested aid from Jamestown, a distance of 38 miles. This department dispatched two pumpers; one unit responded voluntarily from Tower City, a distance of 18 miles. These pumpers stood by and their crews assisted in opening sewer lines in the Montgomery Ward basement, which had no floor drains, to dispose of accumulated water that threatened to involve stock. The Tower City force responded to an accidental alarm received at the height of the main blaze.

Chief Raveling was frank to confess the lack of certain facilities that would have aided in the fire fighting operations. "We perhaps could have made a better attack on this fire if we had more heavy stream appliances. In a fire of such proportions, heavy streams are of utmost importance but we were fortunate in that we had one deluge set with an Elkhart J200 nozzle on the tip. This set played an important part in protecting exposures and in getting a large volume of water onto the fire. We were putting in excess of 2,000 gpm into those buildings yet we could not knock this fire out."

No mobile radio

Another serious lack was mobile radio. "We do not have any radio equipment on our trucks," reports the Chief. "We certainly could have used it that night. We've been trying for some time to get this equipment but lack of funds held us up."

Although deficient in these respects, the department was well-off in others. Salvage was carried out with the aid of a smoke ejector which was placed on the second floor of the Montgomery Ward Store. A portable pump also was operated in the rear of this property to remove water flowing into the elevator shaft hole. Also, and this is outstanding for volunteer departments, Airkem sprayers were placed in operation to lessen smoke damage. Some smoke damage occurred to apartments over the Montgomery Ward Store and subsequent investigation disclosed two holes in the party wall between Ward's and the S & L property which funneled smoke between ceiling and floor joists into this area. One hole measuring 18 inches by 12 inches led smoke into the Ward's stockroom under the store.

Another fault occurred at the second floor level where joists were blackened but not burned. The fire was held in check at this point by the lines played along this wall. This was the critical point at which the fire was halted in its advance to the north.

Citizens pitched in to aid the volunteers and help prevent ignition of exposures by flying sparks and embers.

According to Chief Raveling, the fire demonstrated the wisdom of constant inspection and fire prevention. The Valley City Department is active in the field of prevention and periodically checks all buildings. Those that burned were completely rewired three years ago and were inspected as late as January 21. At that time several violations were noted in the S & L Store's basement area and over-fusing of circuits was found in the rear of the main floor. Two circuits of No. 14 wire were fused with 30 ampere fuses and the department recommended immediate change to 15 ampere. Nevertheless, firemen removed the original 30 ampere fuses out of the blocks after the fire.

"We are thankful no lives were lost nor any injuries sustained," reports Chief Raveling. "Valley City did not have a major fire for so long that many people were under the impression that just such a thing couldn't happen here. Well it did—and it proves you cannot count on the assumption that fire will not strike your community. You must be prepared beforehand."

SALVAGE AND OVERHAUL—*Continued from page 323*

sional salvagemen that employment of elevator shafts to dewater upper floors of a structure should be done only where absolutely necessary.

Nevertheless, it is agreed that every effort should be put forth to afford all possible protection to elevators. They are the first line of transportation at lofty fires and may be the means of saving fire fighters and salvagemen exhausting, back-breaking climbing up numerous flights of stairs and quite possibly rendering them incapable of performing any work upon arrival at the fire or water accumulation.

It may be considered a foregone conclusion that where basements exist and elevators serve below street levels, there are storages and/or machinery susceptible to water damage. The basement, therefore, is one of the first considerations to have the attention of the salvageman.

Value of pre-fire Inspections

Pre-fire inspection should acquaint the fire department, and it is to be hoped, the salvage corps, with the contents of basements; whether or not costly elevator or other machinery, heating and lighting equipment, as well as storages are located there. And at the same time, such advanced investigating should disclose the most available and advantageous means of removing accumulated basement water deposits. The more valuable and destructible the storages and other material located in below ground levels, the more important it is to chart beforehand the various outlets for dewatering and the methods that may have to be employed in the operation. And knowing the vertical arteries of all kinds is a requisite.

Dewatering operations for salvage purposes are not necessarily related to fire or its aftermath. Water damage, or threat of it, may arise from a sprinkler leak or breakdown, or from flood. For the most part, however, salvagemen are concerned with removal of surplus water resulting from fire extinguishment.

The source of the excess water to be removed, by one means or another, suggests to the experienced salvagemen the possible damage that it may do to stocks and building and also, the safest and best way to remove it.

Water that has drained through fire damaged materials carries with it debris of different kinds. This may be cinders and ash, damaged stock, even chemicals. In general, such accumulations result in "dirty," if not dangerous water.

By contrast, water from a damaged or broken sprinkler system may be said to be "clean" water. Its foreign matter content will depend largely upon the kind of storage in the flooded area. Dewatering of this accumulation, therefore, is a cleaner, easier, safer job both for men and equipment, then ridding a fire building of its accumulated dirt and debris.

Water from nature's floods is invariably foul and muddy and quite likely will contain grit, refuse and foreign matter mixed with the residue of the materials which it involves in basement or otherwise.

For the most part, dewatering operations involve removal of water, generally foul, from basements or subsurface area, and all possible precautions should be taken to see that the least possible damage is done to dewatering facilities.

Conclusions on basement dewatering

Removal of water from basements is a serious and possibly dangerous,

Continued on page 348

"Easiest-handling hose we've ever used"

EUREKA Multiple-Woven with Dacron Filler Cords

"Whether we are fighting a fire, drying out hose or stowing it away, we find Eureka's Dacron the easiest handling hose we've ever used," states a Fire Chief* whose department has been using it for several years. "It's much lighter, more flexible, dries faster and allows us to pack more hose in the same amount of space."

Multiple-woven on Eureka's unique circular looms, this Dacron-cotton, rubber-lined hose is available in all standard diameters. It is built to withstand test pressures of either 400 or 600 pounds, and can be furnished waxed or gum-treated if desired.

Put it on one of your pumpers and see if you don't consider it the *best all-purpose hose* your money can buy! In the long run, you'll probably find it the *most economical*, too. Write or wire today for the Eureka representative to call. He is a specialist in fire hose!

*Name on request

Note how criss-crossing vertical cords tie all plies into one solid body.

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

1 Market Street • Passaic, New Jersey *Division of* **United States Rubber**

WHAT'S NEW

Among the Manufacturers

- products
- processes
- personalities

Connaughton Now LaFrance President

George R. Hanks, for the past five years president of American-LaFrance Corp., Elmira, N. Y., has been elected chairman of the board and chief executive officer.

He is succeeded in the presidency by James F. Connaughton, who has resigned as a vice president and a director of Baldwin-Lima-Hamilton Corp. to join American-LaFrance. Connaughton also was elected to American-LaFrance's Board of Directors.

A native and for many years a resident of Hamilton, Ohio, Connaughton has been an engineering executive since his graduation from the University of Cincinnati. He was associated with General Machinery Corp. and Lima Hamilton Corp. before joining the Baldwin-Lima-Hamilton Corp., as vice president and general manager of its Hamilton Division in 1949.

He will make his headquarters in Elmira, site of the principal offices of American-LaFrance, a leading manufacturer of fire fighting apparatus, fire protection equipment and specialized motor vehicles for both civilian and military use.

American-LaFrance is a subsidiary of Sterling Precision Corp. of Buffalo.

Connaughton has also been elected a vice president and director of Sterling Precision.

Featherweight Portable Resuscitator

The Bomgardner Manufacturing Company, 1384 Hird Ave., Cleveland, Ohio, recently announced the development of a portable lightweight gas machine that weighs but 17 ounces. It may be employed either for the administration of an anesthetic, or oxygen in the case of resuscitation.

Oxygen is supplied by the means of small packaged cylinders, each cylinder containing enough oxygen or, if required, anesthetic gas under pressure, to carry approximately 15 minutes per cylinder.

The entire unit may be held in one hand when applying treatment.

Because of its small size and light weight, as well as flexibility, it is finding growing use in fire departments, first aid units and ambulance squads.

Waterous Electro-Matic Pump

According to the manufacturers, the first fire pump which can be fully equipped with automatic power controls has been introduced by the Waterous Company of St. Paul, Minn.

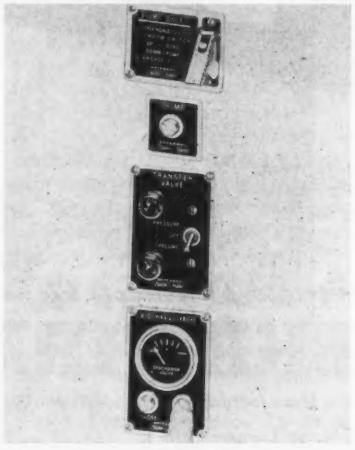
The new Electro-Matic employs electric controls for shifting, priming, discharge and transfer valves.

Shifting is accomplished by a flip of a switch mounted on the dashboard inside the cab. Priming and discharge valve operations are both controlled by push-buttons located on the control panel. An indicator dial in the discharge valve control informs the operator of the exact position in which the discharge valve is set.

The transfer valve is also electrically operated and is therefore completely independent of engine speed and pump pressure. According to the manufacturer, rapid change-over can be made at any pressure setting without producing shock pressure changes. Indicator lights located beside the switch, signal the operator the instant the change from "volume" to "pressure" (or vice versa) is complete.

Other new Electro-Matic features include quiet-running helical pump transmission gears and a new drain valve which permits simultaneous draining of the entire pump.

Traditional Waterous features retained in the new pump are the horizontally split, two-piece casing, bronze impellers with renewable bronze wear rings, stainless steel impeller shaft supported by three oil-lubricated ball bearings located outside the pump casing, two split-gland stuffing boxes and flinger rings.



Electro-Matic pumps are available in 500, 600, 750 and 1,000 gpm Class A capacities.

Further information on the new pumps may be obtained by writing to the Waterous Company, 48 Fillmore Avenue, St. Paul 1, Minn.

Fyr-Fyter Air Mask

A new air mask, weighing 35 pounds has been developed by Fyr-Fyter Company of Dayton, Ohio.

The new mask is designed for use in fire fighting, rescue, tunnel and sewer work, among many other applications where gas, fire and lack of oxygen are hazards.

The Fyr-Fyter Air Mask protects against an endless variety of gases. Included are carbon monoxide, hydrogen sulphide, aromatic hydro-carbons, carbon dioxide, chlorine, ammonia, hydrofluoric acid, phosgene and aldhydes gases and gasoline, benzene and naphtha vapors.

The masks are equipped with two cylinders, each holding 26 cubic feet of air, that are easily mounted on the wearer's back. According to the manufacturer, among the advantages of the mask are: Air will not be released until the operator inhales through the demand valve in the face piece; a bell warns the operator when the air or oxygen supply nears exhaustion, so he can retreat to safety; wearer has greater maneuverability in narrow spaces and can crawl and climb ladders; the demand valve in the face piece eliminates the need for a high pressure line from the cylinder under the wearer's arm; a Scotchlite "see in the dark" band on each cylinder makes them easily distinguishable in poor light or smoky atmospheres.

Beck Announces New Ahrens-Fox Pumper

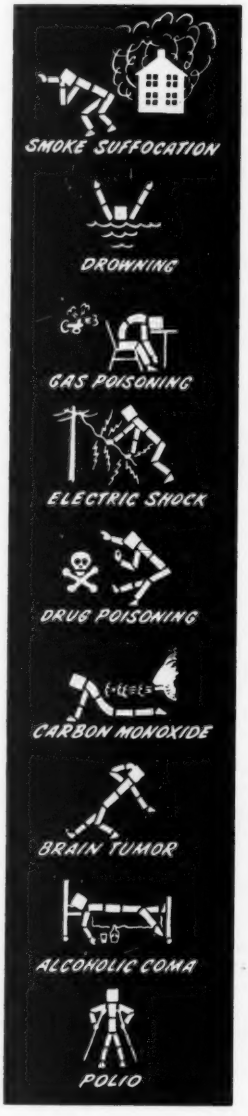
In 1853, A. B. Latta, a citizen of Cincinnati, successfully tested his first steam driven fire engine, the "Joe Ross." The "Joe Ross" was later purchased by the City of Cincinnati, and a new era in fire fighting was introduced.

The tie-up between A. B. Latta, inventor and constructor of the first suc-

Continued on page 343

Now YOU Can Save More Lives!

When YOU Are Prepared to Act Quickly



With the Versatile

STEPHENSON PORTABLE RESUSCITATOR

You have Four Machines in One

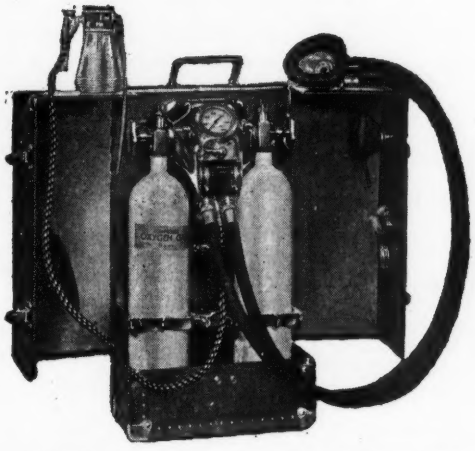
Resuscitator Inhalator Aspirator Assistor

Dependable

Efficient

Safe

Simple



MIDGET

Most effective in cases of smoke suffocation–gas poisoning–heart attack–electric shock–asthma etc.

By adding the Midget Resuscitator you can resuscitate an extra patient. The extension hose permits you to aid the patient partly buried under debris, in high places or any place hard to reach.

Hundreds of your fellow chiefs have learned from experience that Stephenson Resuscitators are the most effective and do more for the patient.

STEPHENSON CORPORATION
RED BANK NEW JERSEY

"Makers of the Harger Drunkometer and Breathalyzer for determination of intoxication by analysis of breath."

***Represented in Canada by* WILSON & COUSINS, Toronto**

STEPHENSON CORPORATION F-304
RED BANK, NEW JERSEY

Gentlemen:

Please send me information about Stephenson Portable Resuscitator

☐ Demonstration without obligation
☐ Pamphlet

Name_____

Address_____

City_____ State_____

FALSE ALARMS

Qualified

The husky young high school graduate applied for admission to the Fire Department. He was asked to fill out a four-page application form.

Finally, after much searching, he found an item on the form he could answer. To the query, "What machines can you operate?," he wrote confidentially: "Slot and Pin Ball."

A group of men at the club were discussing the color of their wives' hair, and Jones was the only man who couldn't remember. He decided to rush right home and find out. Dashing into the living room he found his wife sitting on the davenport; he looked at her hair, and cried:

"Brown!"

And from behind the davenport came a surprised voice:

"Now, how did you know I was here."

—Statler Journal

Baby Sitter: "And after Goldilocks ate the porridge, she went upstairs and saw three beds."

Junior: "Jumpin' Jeepers! That porridge musta been spiked."

Polite to Extreme

Johnny had an accident—his pants were torn. The teacher had just finished a temporary patch, when Johnny, always polite, murmured, "Thanks, teacher, I hope I can do the same for you sometime."

A tough drill sergeant was working during a hot afternoon session with a listless platoon. Finally he called a halt and shouted, "You guys think you're soldiers? Why, I 've seen better drilling by little cans of beer on television!"

The Cheat!

"He was kicked out of school for cheating!"

"How come?"

"He was caught counting his ribs in a physiology exam."

Ode to Engineers

With clouding wits the draftsman sits,
  And pushes pens and pencils,
While day by day the years slide away
  Among his prints and stencils.

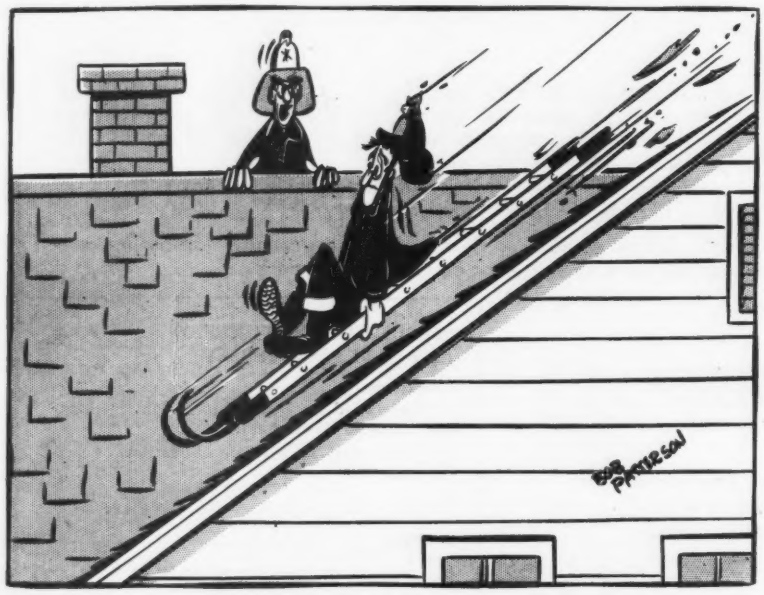
He never shirks his tiresome work
  He couldn't do without it.
And if he stops, asleep he drops
  And then he dreams about it.

And everyday in the same old way
  He carries out his duties,
With never a glance for gay romance
  And blind to all their beauties.

And when, someday he'll pass away,
  There'll be no change to show it,
For engineers are dead for years
  Before they ever know it.

—Anonymous

Drive carefully; don't insist on your rites.



"Hooks down, Donovan, hooks down!"

A Pullman porter who had started out on an all-night run had his trip cancelled. Returning home unexpectedly he looked around the house, then took out his razor and began to strop it vigorously.

"What you doin', Jackson?" asked his wife.

"If those shoes stickin' out from under the bed ain't got no feet in 'em, I'm goin' to shave."

50-50 Chance

Cheer up!
  You have two chances,
One of getting the germ
  And one of not;
And if you get the germ,
  You have two chances,
One of getting the disease
  And one of not;
And if you get the disease,
  You have two chances,
One of dying,
  And one of not.
And if you die—well
  You still have two chances.

—American Eagle

Judge: "But why didn't you put your hand out to show that you were going to make a left turn?"

Driver: "Because the last time I did that in this town somebody stole the cherry out of the Martini I was holding."

Little Wifey: "You've just got to stop drinking, Sam. Five doctors have said it's bad for you, and they ought to know."

Imbiber: "But do they know? You see a lot more old drunks than old doctors."

No matter how many women race to buy Christmas presents for men, the race always ends in a *tie*.

Advice

Jack had just been informed by his father that he was spending twice as much money at college as he should. "Son," remarked his father, "I know you're spending it on whiskey and women. I don't mind your fooling with one of these, but you can't keep up the pace with both. You've got to cut one of them out absolutely." "All right, Dad, I'm willing. Which one would you advise me to cut out?" The old man thought in silence for a moment and then said, "Son, you can drink all the whiskey you want when you get old."

To keep costs down, the fire company chef had been preparing hamburger in as many different ways as he knew how.

On the 12th day he served still another version of chopped meat. As the lieutenant surveyed it wearily he murmured: "How now, ground cow?"

YOU EXPECT THE BEST FROM AKRON BRASS

– here it is . . .

Entirely New PDQ FOG NOZZLE

★ Resilient rubber bumper for protection against damage

★ Adjustable through all angles of fog

★ Positive stream positioning — by feel or sight. Clicks into fog patterns or straight stream

★ Swivelling "Rocker Lug" base — handle is always on top

You too will agree — finest nozzle of its type

★ Corrugated no-slip grip

★ High gallonage

★ Easy pattern indicators

★ Akron quality ball shut-off

★ Man-size handle

PERFORMANCE DATA

at 100 P.S.I. Nozzle Pressure

STYLE	SIZE	NARROW FOG GPM
1209	¾" - 1"	24
1218	1½"	95
1219	1½"	125
1229	2½" for PP	250
1239	2½" Dir. Con.	250
1249	2½" with PP	250

Akron Brass Mfg. Company, Inc. • Wooster, Ohio

AKRON BRASS

FIRE FIGHTING EQUIPMENT

CAIRNS HELMETS

THE FIREMAN'S FIRST LINE OF DEFENSE

IN TOP-GRAIN LEATHER

No. 5A
The "NEW YORKER"
REGULATION

No. 550
The "SEAMLESS"
DROP BRIM

IN ONE-PIECE ALUMINUM

No. 350
The "SENATOR"
REGULATION

No. 710
The "STREAMLINER"
DROP BRIM

IN "FLINT-FLEX" PLASTIC

No. 900
The "CLIFTON"
REGULATION

No. 725
The "CAVALIER"
DROP BRIM

We can supply everything the fireman needs for his personal equipment. Write for Catalog 351.

CAIRNS & BRO., Inc.—Allwood, Clifton, N. J.

SINCE 1836

World-Wide Fire News

Our British Cousins Ape Us?

Somehow or other we thought we had a mortgage on burning fire houses. Seems we haven't. But there appears to be this one difference: whereas in this country when we have a fire station fire we too often wind up with complete destruction of the house and apparatus; in Britain they usually manage to save both.

Latest such episode comes to us via "Fire Protection Review" (Feb. 1956) which recounts that Cardiff firemen spent last Christmas night, no less, fighting a fire at their own headquarters in Westgate Street. Extensively damaged was the roof of the building and top floor flats "occupied by firemen's families." (You know, of course, that throughout England, many fire stations house firemen and their families).

In this case, the blaze was brought under control within 20 minutes. Newport and Glamorgan Fire Brigades both sent additional appliances to the fireground. The fire, discovered by the fireman occupant on the top floor flat, originated in the attic used by housewives as a drying room. Families in the building were promptly evacuated, while Brigade members fought the blaze from "turntable ladders." Other firemen wearing breathing apparatus worked from inside the building.

Taxes Boosted to Put Out a Fire

Taxes in North Versailles Township, Pennsylvania, will go up, probably about one mill, press accounts state, so that an old coal mine fire in the Green Valley section of the township can be put out.

The fire has been burning underground since the 1930's and townsfolk and others have discussed various ways and means of extinguishing the stubborn blaze for almost as many years.

On January 16, township commissioners added $12,500 as the town's share of the sum it will require to finally extinguish the outbreak. The State has promised to match North Versailles' money and the Federal Government will pitch in with another $25,000 to meet the total cost of the project.

Chairman of the Commission Otterson said the tax rise will be necessary; a one mill increase should not about $15,000.

Fresh From the World Fire News Ticker

Nation's fire loss got a $7 million boost January 4, last, but 21 airmen all escaped unharmed when an RB-36 intercontinental bomber caught fire on landing and burned at Ellsworth Air Force Base, S. Dak. Base fire fighters subdued the fire within an hour but ship was total loss. Training of crew members is credited for their escape. . . . A mysterious

explosion shook more than 100 square miles of sparsely settled Swedish Lapland, January 21. Scientists speculate a meteorite struck the earth. . . . After a hectic train ride in which baggage car behind that transporting Nail, the leading juvenile money-winning horse, caught fire, the famous racehorse arrived safely at Hialeah Park, Fla. Fire broke out about 20 miles north of Richmond on trip from New York. Mail in baggage car was saved but baggage and newspapers were lost as car burned to its frame. . . . Hewitt House, historic tavern, where legend said Revolutionary strategy was mapped, burned January 2 in Stillwater, N. Y., property loss $65,000. . . . Fire swept through the Black Sea coast town of Gerze the night of February 13, last. Twenty persons died in a Turkish bath where they sought shelter from the flames. About 900 homes were destroyed. . . . A 74-year-old son rescued his 98-year-old mother from a burning house January 7. Trapped in upstairs bedroom, Mrs. Mary Riseham screamed for help. William, her son, crawled through thick smoke and flames to reach her and remove her to safety. . . . In Highgate, England, while Nathan Gilbert a barber clipped his hair, a customer lit a cigarette and tossed away the match. A few moments later, Gilbert felt unusually warm. He was indeed. The white coat he was wearing was in flames as were his curtains and window frames. But the customer, 'tis said, grabbed the shampoo spray and doused the flames. Hot towel sir? . . . A pre-dawn fire swept through a congested amusement area February 29 last in Kushiro, Japan, leveling three theatres and 15 other buildings. One body was recovered and one person was missing. Three who jumped from flaming roofs were hospitalized. . . . In Chartwell, England, an oil stove burst into flame February 18, a few yards from where Sir Winston Churchill was sleeping at his country estate. The 80-year-old statesman slept through the excitement as a policeman doused the fire. . . . Fire, fanned by a strong wind, destroyed the medical company barracks of the U. S. Army's 5th Cavalry regiment near Sendai, Japan, February 25. No one injured. Loss undisclosed. . . . Six women and a man burned to death February 23 in a fire that swept through a 3-story textile mill in Keighley, England. Firemen saved dozens of persons trapped on the top floor, but interior of building collapsed before rescuers could reach the seven. . . . Legislation to make it a Federal offense to sabotage or attempt to sabotage an airplane, bus or truck engaged in interstate commerce was approved March 9 last by a House Judiciary subcommittee.

Correction

In the March, 1956, issue of FIRE ENGINEERING, page 226, reference was made to "Acting Chief" Edward Connors of the New York Fire Department. His title is Chief of Department, not "Acting Chief."

SELF-CONTAINED
PRESSURE-PACK
protects areas up to
416 sq. ft.
from damage by fire in flammable liquid

For bulk plants, refineries, and other industries where certain hazards may be isolated from the main fire protection system . . . and for gasoline pump houses and small storage buildings . . . National Aer-O-Foam Pressure-Pack provides positive control of fire without costly water lines and booster pumps.

- May be used with either portable or fixed foam-making devices
- Easily installed without special tools
- Manual or automatic operation
- Choice of two operating pressures
- Easily tested at any time without recharging
- Yearly recharging not necessary

See your National Foam distributor, or write direct. Find out the low cost of a National Aer-O-Foam Pressure-Pack, or several Pressure-Packs in combination.

NATIONAL FOAM SYSTEM, Inc.
West Chester, Pa.

Look what's happened to Fire Pumps

Power shifting . . . a new exclusive *Electro-Matic feature**

Flip the switch and the *Electro-Matic* is engaged!

No groping with cab or panel levers . . . no nursing gears into mesh . . . shifting is performed *automatically* and smoothly by a fast-acting shifter that's proved dependable in thousands of modern commercial trucks.

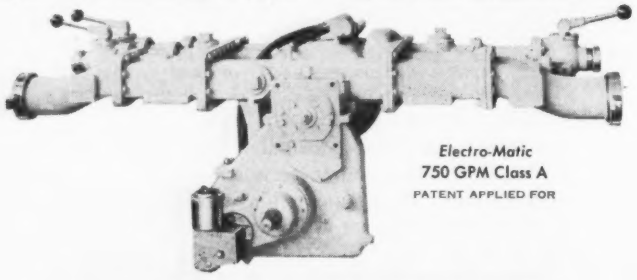
Power shifting is but one example of the revolutionary new features by which this new WATEROUS Pump has introduced a new era in fire fighting equipment . . . the *Electro-Matic Era.*

Power-controlled discharge valves, power-controlled transfer valves and push-button priming all make operation of the *Electro-Matic* smooth, fast, and simple with a minimum of physical effort and lost motion.

And to all this add new, scientifically designed impellers and waterways for greatly improved performance with less space and weight . . . 2-piece horizontally split pump housing for simplicity and accessibility . . . and oil-lubricated impeller shaft bearings which are protected from water by their location outside the pump for long life and dependability.

Electro-Matic Fire Pumps with Class A capacities of 500, 600, 750 and 1000 gpm are standard equipment on leading makes of fire apparatus.

For further information, write Waterous Company, 40 Fillmore Avenue, St. Paul, Minnesota.



Electro-Matic
750 GPM Class A
PATENT APPLIED FOR

WATEROUS
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*Registration applied for.

Persons in the News

Volunteer Chief Honored

At a recent election of officers of the Grantsburg, Wis., Volunteer Fire Department, Chief John Anderson was made Honorary Chief and Consultant. He is 72.

The recipient of these honors has served the department for 52 years and as its chief for 45 consecutive years. During this long period he has missed only seven regular meetings out of 1,276 and, in addition has attended all committee gatherings and other functions, as well as fires.

For 40 years the Chief was a blacksmith in Grantsburg. In this connection he was instrumental in making and repairing fire department equipment. He saw the department advance from the old hand-drawn pump and hose carts to its present efficient motorized status.

Further honors were given Chief Anderson when the St. Croix Valley Firemen's Association presented him with a solid gold commemorative badge. The local department also gave him a new uniform and cap.

Westervelt Heads NBFU Public Relations

Frederick W. Westervelt, Jr., has been named Manager of the Public Relations Department of the National Board of Fire Underwriters.

Mr. Westervelt has a wide background of insurance experience, including activity in the field of insurance public relations. He began his insurance career with Globe Indemnity Company in 1925, later serving with Marsh and McLennan, Inc., and Vanderpoel, Pausner and Webb. From 1932 to 1941 he was active in the affairs of the Essex County Insurance Agents' Association. In 1941 he became assistant director of the Business Development Office and in 1946, joined General Adjustment Bureau, Inc.

William L. Miller Named To California State Board

Chief Engineer William L. Miller of the Los Angeles Fire Department has been named by Governor Goodwin J. Knight to the California State Fire Advisory Board. Chief Miller succeeds John H. Alderson who resigned from the board upon his retirement from the LAFD.

Paul C. Ditzel

John Neale Nominated to Head NFPA

John A. Neale, Chief Engineer of the National Board of Fire Underwriters, heads the slate of new officers to be voted upon at the forthcoming 60th Annual Meeting of the National Fire Protection Association the week of June 4, in Boston.

Chief Henry G. Thomas of Hartford,

Conn., former President of the International Association of Fire Chiefs and Loren S. Bush, Chief Engineer of the Board of Fire Underwriters of the Pacific, were nominated as Vice-Presidents.

Richard E. Vernor, Manager Fire Prevention Department of the Western Actuarial Bureau, Chicago, was nominated for Chairman of the NFPA Board of Directors. The retiring President is T. Sedden Duke, President of the Star Sprinkler Corporation, Philadelphia.

Hurst Made Ontario Deputy Marshal

Martin S. Hurst has been appointed Deputy Fire Marshal of Ontario beginning March 1, 1956, to succeed J. E. Ritchie who retired last February. Mr. Hurst has been with the Ontario Fire Marshal's Office since 1949, and has been Assistant Deputy Marshal since 1951. Previously he served ten years with the Toronto Fire Department, including two and a half years overseas during the war as an officer in the Corps of Canadian Fire Fighters who served with the British National Fire Services.

Former Chief Almgren Feted

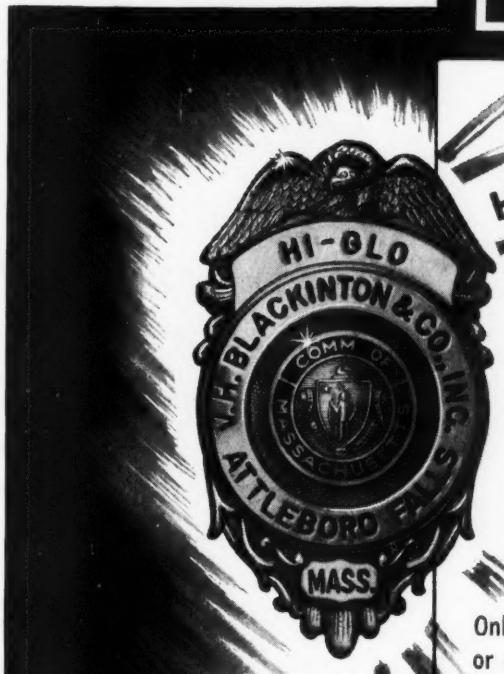
Former San Diego Fire Chief Louis Almgren, who retired from the department in 1935, was tendered a surprise birthday party by more than 400 visiting fire fighters on February 3.

The affair, marking his 80th birthday, was held at the Mission Valley Country Club, San Diego. Present Chief George E. Courser, Chairman of the Arrangements Committee, acted as master of ceremonies.

The former Chief and his wife were caught by surprise and received a standing ovation. Numerous speakers extolled the retired official, recounting the progress made by the San Diego Fire Department under his long leadership. To him are attributed the ideas for gasoline-propelled fireboats; motorization of the department; installation of a modern fire alarm system, fire prevention bureau and other innovations.

Past and present chiefs of the San Diego Fire Department. Chief Louis Almgren (left) and Chief George E. Courser (right)

YOU CAN POLISH THIS BADGE FOR A.. Lifetime



HERE IT IS THE NEW BLACKINTON HI-GLO BADGE

Only a Solid Gold Badge or a **HI-GLO** Badge will last a lifetime.

THIS BADGE WILL MAKE YOU THINK TWICE — BEFORE ORDERING ORDINARY GOLD BADGES . . . . *WHY?*

. . . because this new **HI-GLO** Badge is different. It is made from an entirely new material — a rich looking golden metal that is solid gold color throughout. That's why you can polish a **HI-GLO** badge for a lifetime. Every **HI-GLO** badge will have deluxe enamel lettering and a ruby colored stone (optional at extra charge) set in the eye of the eagle. You can see, the new **HI-GLO** badges will be something special, a distinctive badge for those who want the very finest gold color badge.

Your Blackinton equipment supplier has samples of the new HI-GLO badge. Ask him for more information.

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V. H. BLACKINTON & CO., INC.
ATTLEBORO FALLS, MASSACHUSETTS

Among the Buffs

By Paul C. Ditzel

THIS BEING THE Golden Anniversary of the Great San Francisco Earthquake and Fire reminds me to call your attention to the current issue of *Saga Magazine* whose front cover painting features Chief John Dougherty, "The Man Who Saved San Francisco."

The *Saga Magazine* story is one I think all you buffs will find of great interest. Many members of the Phoenix Society were of especial help to me during the week I spent in the Bay City researching it.

As some of historically-minded buffs know, San Francisco was warned by the National Board of Fire Underwriters that it was overdue for a fire disaster some months before the earthquake teamed up with the flames to wreak one of the worst catastrophies of our times.

Despite these warnings the city blissfully went about its merry way.

The earthquake topped part of a building down upon Fire Chief Dennis Sullivan's firehouse and when he went to see how his wife fared in a nearby room, Chief Sullivan fell through the hole made by the falling masonry and suffered mortal injuries.

Grizzled Assistant Chief Dougherty faced the greatest challenge of his career, if not the greatest challenge to any fire chief of modern times when he found himself in sudden command of the city's firemen and apparatus. Aside from the blow to morale, imagine the shock to the chief and his men when they found the quake had disrupted the water supply and also put the alarm office almost completely out of operation.

Some months ago you'll remember I also tipped you off to an impending comprehensive article on fire buffs and fire fan clubs which was to appear in *Bluebook Magazine*. The magazine recently folded its tent and not-so-silently crept away, thus leaving this bit of publicity for you buffs and your organizations unheralded.

I'm now in the process of revising the manuscript for submission to another major magazine of national prominence and would appreciate any anecdotes you might have on yourself, your friends, or your club's activities. Tell me about some of the worth-while projects carried to a successful conclusion by your organizations. How did you serve at tragedies and disasters, be they fire, flood or tornado?

The impression, as you know, is that all fire buffs are of the lunatic fringe and I'd like to attempt to dispel some of this notion. Particularly would I like to hear from members of the Fire Bell Club, the Boston Club, Baltimore's Box 414 and even more especially, some of the buff-operated canteens in smaller cities like Dayton and other points around the country.

This column has yet to hear from any responsible officer of the fire fan association headquartered in Chicago and I'd appreciate a rundown of their activities, plans and completed projects from whoever might know of them.

I plan to name many of you more prominent buffs and if you should send me any information you'd prefer to remain anonymous in naming names, I'd respect your wishes.

This definitive piece on fire buffs, clubs, why you chase fire engines and how, should reach an audience of upwards of a million readers who heretofore have generally thought of fire fans as a screwball breed. Judging from the mail this column receives monthly, there is a small element of screwballs, but so is there in any hobby, and I'm hoping you readers of this column will help me bring you and your organizations into a more understanding public light.

The address for your comments, information or even beefs about fire fans in general follows as usual at the end of this column.

Speaking of Boston, Editors Julian Olansky and John Campanella of the Boston Sparks Association have the courage and good humor to tell one on themselves, a remarkable accomplishment, knowing as I do how religiously buffs defend their home departments. As told in the Sparks Digest:

"While Boston fire fighters were fighting a working fire in at Box 1511 at 2:45 a.m., in the Stage Bar and Grille at 115-121 Stuart Avenue, causing damage estimated at $40,000, some persons known stole Ladder 3 from the scene of the fire

Here's a break for hard-working firemen!

Dragon® Fire Pumps are designed with the fireman in mind...

1. They come completely assembled in a special carton. Just lift out the pump... fill with water... go into action!
2. The special Dragon harness is easy to get into and designed so the pump rides high where it can't throw the fireman off balance or interfere with walking.
3. Just a few easy strokes of the pump lever gives the operator a *continuous* flow of water he can direct right where it does the most good. And a mere twist of the shut-off nozzle gives either solid stream or spray *instantly*.
4. When he is using a Dragon Fire Pump, the fireman can take his hands off both shut-off nozzle and pump lever to use rake, shovel, or other tool.
5. There's no pump packing to dry out: even after standing idle for long periods, a Dragon Fire Pump is ready for instant use.

Yes, the way to boost firefighter efficiency and cut down fatigue is to specify Dragon Fire Pumps →

VALUABLE DISTRIBUTORSHIPS AVAILABLE, WRITE TODAY.

Dragon FIRE PUMPS

now available in 2 models

No. 150-S—Stainless Steel Tank

No. 150-G — Galvanized Tank: Cold-rolled steel, hot-dipped galvanized after fabrication.

All units equipped with brass pumps; all tanks seam welded. Capacity 5 gallons

DRAGON FIRE PUMPS meet Underwriters' Laboratories requirements and can be supplied with the UL label of inspection attached.

PARCO PRODUCTS COMPANY

PENNSBURG, PENNSYLVANIA

TV to Feature 50th Anniversary of San Francisco Fire

As part of the civic celebration of the Fiftieth Anniversary of the San Francisco earthquake and fire of April 18, 1906, the San Francisco Fire Department, Chief Frank P. Kelly, will be featured on "Success Story," an outstanding TV program of the San Francisco Bay area, carried over Station KGO TV, Channel 7, 7:00 to 7:30 p.m., Thursday, April 19, 1956. Viewers should consult their newspapers for the time the program is shown in their respective sections of the country.

and drove it up Tremont Street with no one at the tiller and then turned down Boylston Street and got almost to Charles Street before they smashed into the fence. Fire fighters, slightly red-faced, went to recover their precious ladder truck."

The Box 414 Association, obviously not naming names, reports one of its members honeymooning recently in New York left his bride and spent all day and part of the evening visiting the fire alarm office. Later, when the apparatus turned out and shrieked past the hotel, the bridegroom raced to the window. What will go down as the quote of the year in the Box 414 club, the bride quipped, "For your information that window is 23 floors up and the door is locked, so calm yourself."

Says the Box 414 editor, Ray Wheatley, "Now we ask you is that carrying fire buffing too far?"

Same club did yeoman duty at the oyster dinner disaster in nearby Brooklyn, Maryland, where 10 persons were killed and 250 others hurt. The first alarm for this fire, says the club's newsmagazine, was turned in by a man who calmly reported: "There is a fire at the Arundel Park Hall. I think you better send an engine company down here."

That's 30 again for this month. Don't miss *Saga Magazine* this month and please hurry your buff anecdotes and activity reports to me at 419 Napoleon Street, Playa del Rey, Calif.

Calls Up—Losses Down

Fire calls for the year 1955 at the Raritan Arsenal, N. J., increased by 35 over the year previous, according to Fire Chief Fred Vaugoin, but fire losses dropped from $44,846.70 in 1954 to a record low of $53.79 last year.

Fire losses for 1955 were the result of five small fires of a material handling equipment nature. The $44,846.79 property loss of 1954 was attributed to one fire at Carteret.

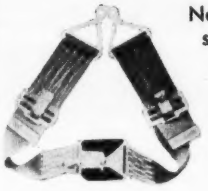
Rupert SAFETY BELTS

A tillerman of Chicago Fire House #6, wearing a Rupert Heavy Duty Belt.

The Chicago Fire Department is now in the process of installing 1,400 Rupert Safety Belts in the tiller seats of all hook and ladders, and in the cabs of squad cars, ambulances, chief's cars, and the commissioner's car.

Rupert Safety Belts are used exclusively by Chicago, Memphis, and Milwaukee Fire Departments.

Rupert Safety Belts Safeguard Your Force



No matter how wild the ride, your men stay safe in their seats when they wear Rupert Safety Belts. When fast action is called for, Rupert Belts release instantly. We recommend two models:

- For tillermen—Rupert's Heavy Duty Belt (left), the strongest belt made! Resists a pull of seven tons!
- For cab men and men in automobiles—Ruperts Auto Safety Belt (right), with 4,000 pound tensile strength.

All Rupert Belts are heavy Nylon,—many times stronger than necessary. All are equipped with quick release buckles. They are comfortable, won't hamper movement, and actually reduce fatigue.

Rupert Safety Belts will protect your force from unnecessary injury and death. **Write for complete information and price list.**

Rupert PARACHUTE CO.
WHEELING, ILL.

THE WATCH DESK

overhauling the firemanic news of the day

Oxygen Explosion Sparks Chain of Events

A nurse in training, a fire captain and a fireman suffered minor injuries, and a just-delivered baby escaped death, in two mishaps that began with the explosion of an oxygen bottle at St. Mary's Hospital in Brooklyn, on January 31, last.

A mother and her new-born babe were shielded from flying bits of steel by a quick thinking nurse, Georgia Coleman, as the top of the oxygen tank exploded.

Miss Coleman, 20, was approaching the crib at 4:30 a.m., right after Mrs. Geraldine Ball, 29, had given birth to a son. The nurse flicked the switch on the inhalator and a steel mixing device at the top of a steel oxygen bottle began shooting sparks and flames.

The nurse rushed to the crib and picked up the baby. Shielding him with her body, she handed the tiny infant to a pediatrician who had attended Mrs. Ball and he rushed the infant out of the room. Miss Coleman then aided others to wheel the mother to a safe place.

Firemen were called, but the fire in the room was out before members of three companies of the 38th battalion arrived. Miss Coleman, treated in the hopsital, was in good condition.

On the return trip to quarters, the battalion car with Harold Tobak, acting battalion chief in the 38th, collided with a sedan, injuring the acting chief and his driver, Fireman Dennis Healy. Driver of the sedan was Arnold Rennert, who got a summons for ignoring emergency fire regulations. Acting Chief Tobak and Fireman Healy were taken back to St. Mary's and treated for their injuries.

Saved in One Blaze—Dies in Second

Mrs. Pauline Kappel, 51, had been staying with friends in Sayville, L. I., since she was rescued by volunteer firemen late in December, last, when a smoky blaze damaged her home in Sayville.

On the night of February 5, with repairs almost completed, she returned to the two-story frame residence where she had lived alone since her husband died in 1954.

At 2:00 A.M. on the 6th, a second fire struck the dwelling, almost destroying it. Mrs. Kappel was found on the living room floor by the same volunteer firemen who had previously saved her—but this time she was beyond help. She had succumbed to suffocation.

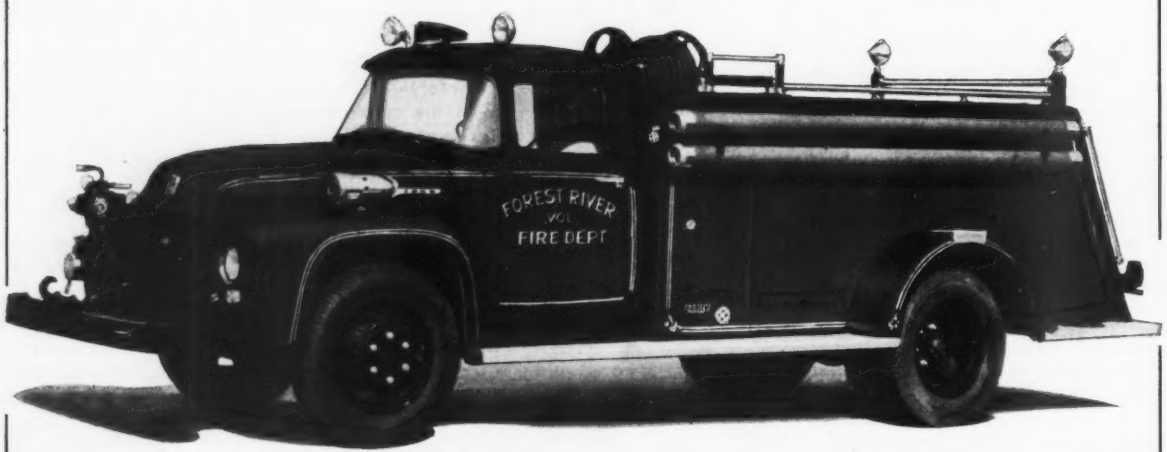
The first fire was attributed to a short circuit. The lower part of the house was still without lights when Mrs. Kappel was driven home the night of the 5th, by a taxi driver who waited until she had lighted a kerosene lamp.

Firemen were unable to determine the cause of the second fire. The victim might have overturned the stove, or there might have been another short circuit. The dwelling, one of the showplaces of Sayville, was filled with antiques, many of which were destroyed or damaged beyond repair.

Hot Off the Tape

Door-to-door fire delivery: In New Orleans, garbage collector Clarence Eckelmann's plan to inaugurate curb service for the fire department backfired. When his garbage truck caught fire January 9, last, he drove to the nearest fire house. But when he arrived he found the station closed for repairs. Engine 68, quartered in another station, hadda dash more than a mile to snuff out the smelly blaze. . . . ***Fire and water suicide:*** In Tickerton, N. J., Mrs. Fannie Thomas, 73, drowned herself in Barnegat Bay after trying to burn down her house around her. Condition of her home and the burns on her body indicated she set fire to the struc-

500 Gallon Darley Ford Pumper



The pump is the Darley Champion Type KFF500 manufactured exclusively by W. S. Darley & Co. and used on Champion Fire Apparatus. A 2-stage centrifugal with superior engineering features which guarantee brilliant performance throughout the entire range of pumping requirements for fire fighting.

The KF Series Champions are double duty fire pumps which provide the complete range of volume performance for heavy streams plus the fire smashing efficiency of fog.

Write for Fire Equipment Catalog and Fire Apparatus Booklet

AT YOUR SERVICE: Sales and Service Representatives — East, Midwest, North, South

A few Territories open for Sales Representatives. Write us.

W. S. DARLEY & CO., Chicago 12

Factories — Chicago and Chippewa Falls, Wis.

ture, then put on her clothes, ran out and jumped in the Bay. At any rate, she did a complete suicide job of it. . . . ***Swipes truck—but goofs steering:*** While Boston fire fighters were busy battling a night club blaze that caused $40,000 damage, someone stole one of their nicest and biggest ladder trucks. The thief abandoned the ladder a few minutes later when it crashed against a fence at Boston Common. He learned he couldn't make a full swing around the corner of Tremont and Boylston streets without a tillerman to negotiate the vehicle's hind-end. The Boston brothers would like to locate him! . . . ***Wrecker wrecked:*** Charles H. Rose, 38, was shaken up when his car ran off a road near Ann Arbor, Mich., February 2. He called a wrecker. Mr. Rose rode in the wrecker-truck. The wrecker skidded off the road. Rose was knocked unconscious. The truck driver called an ambulance. It came, picked up Rose. En route to the hospital the ambulance collided with a car at an Ann Arbor intersection and was wrecked. Another ambulance was called for badly battered Mr. Rose. He was dead on arrival at University Hospital.

Worm Turns—Blisters Executioners

How will you have your worms,—sauted, broiled—or just plain fried? That's the question that's still bothering Illene Novikoff, secretary at Fawcett Publications, West 44th St., Manhattan.

Illene had no receipe for cooking worms, and mebbe that's why she went to the hospital—and the worms were incinerated.

It all started when Fawcett Publications received a small metal can, along with a ton or so of assorted manuscripts, at its West 44th street office.

In the can, to the horror of several female employees, were a couple dozen very live and wriggly worms. Uh-huh—worms—the things you thread onto the end of a fishhook, or fish out of an apple.

After hurried editorial conferences, Illene, an 18-year old secretary, was presented the can and told to get rid of'em.

Not having any home receipes for 'cooking' worms, Illene, pursued by shudders, took the worms from her 17th floor office to the photo lab on the 4th floor. Don't ask us why—worms aren't photogenic anyway.

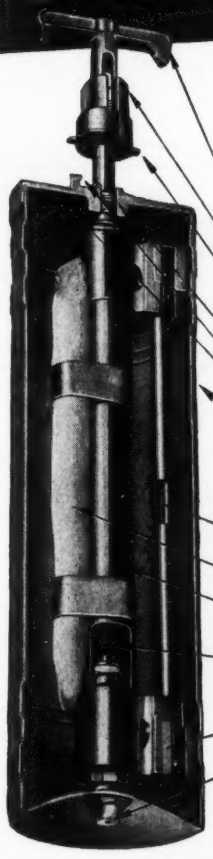
Keeping the can at arms length, Illene dumped duplicator liquid into it (duplicator fluid is sort of second cousin to cigarette-lighter fluid and not far removed from gasoline, as you know).

Well, the worms seemed to enjoy it. They swam merrily about. Then, somebody had another bright idea—why not frizzle 'em! So he or she dropped a match into the can.

There was a flash of flame. Illene was burned on—on her pedal extremities. Alfred Giardello, 17, was burned on the right arm.

Meanwhile firemen were called. Members of Engine 65, first due, put a stop to the resulting fire, but they weren't in time to prevent the incineration of the worms. They were "done to a turn."

MORE *built-in* PROTECTION!



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Trade-Mark Registered

VAPORIZING LIQUID EXTINGUISHERS

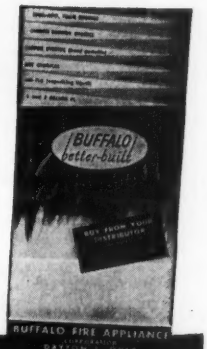
- FORGED BRASS HANDLE
- LEAKPROOF SEAL CAP
- CONVENIENT, EASY SHUT-OFF
- MOISTURE PROOF BREATHER
- ONE PIECE FORGED BRASS CAP and LOCK
- EMBOSSED BRASS SHELL FOR STRENGTH
  Protects pump heads
- ONE PIECE VIBRATION and SHOCKPROOF PICK UP VALVES
- DRYEX CORROSION PREVENTION
- INSTANT DOUBLE-ACTING PUMP
- GRAPHITAR PISTON . . . will not corrode
- REVOLVING DOUBLE END PICK UP
- RECESSED BRASS NOZZLE

GUARANTEED FOR 2 YEARS!

AVAILABLE IN 1 QT., 1½ QT.
1 GALLON AND 2 GALLON SIZES

UNDERWRITERS' LABORATORIES, FACTORY MUTUAL AND COAST GUARD APPROVED!

You get surer fire protection from Buffalo better-built extinguishers because there's more protection built-in! Highest engineering standards, exacting manufacture and precision inspection produce the finest extinguishers possible. Dealing with your Buffalo industrial distributor has many advantages. He carries a complete line of Buffalo *better-built* portable extinguishers, parts and recharges. Simply call him, one transaction, will answer your fire protection needs in a hurry. Call him now! He is listed in the yellow pages of your telephone directory!



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SINCE 1895 . . .
BUFFALO FIRE APPLIANCE
CORPORATION
DAYTON 1, OHIO

Questions and Answers

wherein are answered questions relating to current problems in the fire protection

Toxicity of Fire Extinguisher Vapors

To the Editor:

1. If vaporizing liquid extinguishing vapors shut off the supply of oxygen to a fire, don't they also do the same thing to the lungs of humans? Its density being heavier than air makes it very dangerous to men in both its natural gas state or even when heated. The three vaporizing agents I have in mind are carbon tetrachloride, chlormethane and chlorobromomethane.

2. How do you prevent front mount pumps, booster reels, booster tanks and hose from freezing up? How do you handle hose that is frozen solid?

3. What are the disadvantages of high pressure fog?

N. D. C.

Answer 1: Vaporizing liquids extinguish fires by smothering. You mention carbon tetrachloride, chlormethane and chlorobromomethane. Apparently by chlormethane you mean methylbromide, which is the third commonly used vaporizing extinguishing liquid.

Such chemicals extinguish by smothering. The vapor thrown off from the liquid is much heavier than air and hangs low around the fire, extinguishing it. Consequently if the vapor or gas is distributed evenly around the room, the atmosphere would not support human life if it were sufficiently charged with the vaporizing liquids to extinguish the fire.

If men are to operate in a closed area where the concentration of extinguisher gas is great as to extinguish fire, they should be provided with self-contained breathing apparatus. Filter-type masks would not serve in such a location, because insufficient oxygen would be present to sustain human life.

Answer 2: All front-mounted pumps are today built with protection against the weather so that there is no danger of the pump itself freezing up. Where booster tanks are used, and where they are likely to be exposed to the weather for a period of time, it is necessary to use an anti-freeze agent such as calcium chloride, to depress the freezing point of the liquid.

About the only way to keep the hose from freezing up is to keep water flowing through it. After the hose has been used, it is essential to drain it. Otherwise, there might be a possibility of the water in the hose freezing and making it extremely difficult to move the hose or bring it back to a point where it could be thawed out.

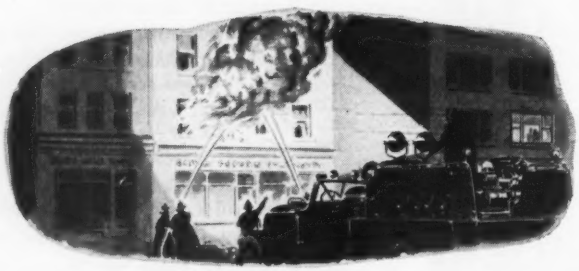
Extreme care must be used in handling frozen hose, as otherwise damage will be done to the fabric of the jacket. Ordinarily such hose is piled on the apparatus and taken back to a warm fire station where it has opportunity to thaw out, before being dried and replaced on the apparatus.

Answer 3: The high pressure fog unit was originally used widely for tree spraying, so there should be no danger due to rupture of hose when under high pressure. If a nozzle should blow off, for example, the flow of water would be such that the friction loss would reduce the pressure at the open end to a point where it would be easy to handle the hose. No reports have been received of any injury done to fire department members who have used high pressure fog regularly.

As to the merits of high pressure fog (600 to 900 pounds), many fire departments have used it, as well as have the Air Corps and the Army. Apparently it has merit; otherwise its use would not have increased.

KOHLER Electric Plants

...independent electricity for municipal and volunteer fire departments



MODEL 1.5M25, *1500 watts, 115 volt AC. Manual starting. 2500 watt AC portable models also available.*

Portable 1500 watt Kohler model provides reliable power for floodlighting night fires—and for smoke eradication, power tools, resuscitators, pumpers, rescue equipment. Compact design, has 4 receptacles, pilot light, double carrying handle. Rubber-tired hand cart available. Other sizes, from 500 watts to 35 KW, include stand-by models for sirens, alarm signals, communications, when central station power is cut off.

Civil defense units use Kohler automatic stand-by electric plants to safeguard lighting and communications at headquarters, shelters, first aid stations, hospitals; portable models for rescue trucks. Write for folder N-7.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

11,182 Seek NYFD Jobs

Some 11,182 hopefuls, age 20 to 29, have filed applications for firemen's written examinations to enter the New York Fire Department. Tests will be held May 26, 1956. Fire Commissioner Edward F. Cavanagh, Jr., has requested an additional 2,000 men in his budget for 1956-57.

What's Burning?

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from February 22nd to March 22nd.

Huntington Park, Cal.—Squire Gymnasium, Huntington Park High School, destroyed. Arson.

Opelika, Ala.—Frame building housing an oxide processing plant for a recording tape manufacturing company, damaged.

Lafayette, Cal.—Dwelling of John Lindberg destroyed.

Laguna Beach, Cal.—Kona Hut restaurant destroyed.

Sacramento, Cal.—Community Industrial Towel Supply Co. destroyed.

Sacramento, Cal.—Brighton Sand & Gravel tool and storage shed destroyed. Faulty electric wiring.

San Rafael, Cal.—Used furniture store and warehouse damaged.

Santa Rosa, Cal.—Four dwellings destroyed, one damaged, at 306, 310, 318, 322 and 324 Decker street.

West Los Angeles, Cal.—Six dwellings and three business firms, including dwellings of W. J. Baxter and G. M. Wells, a plastic glass factory and West Los Angeles Milling Co., damaged. Trench-digging machine smashed pipeline and gasoline seeped into sewer.

Willowbrook, Cal.—Slattery Hardwood Lumber Co. destroyed. Arson.

Hebron, Conn.—Dairy barn of C. Daniel Way in Gilead section, destroyed.

Middlefield, Conn.—Dairy barn at John Lyman farm destroyed.

Washington, Conn.—Dwelling of Herman Brassert, retired metallurgist, destroyed.

Andrews Air Force Base, D. C.—Fabrication shop of U. S. Air Force destroyed.

Washington, D. C.—Randle Apartments destroyed.

Jacksonville, Fla.—Pre-cooling plant to process citrus for foreign shipment, destroyed.

Tampa, Fla.—Barn and seventeen horses, Sunshine Park Race Track, destroyed.

Atlanta, Ga.—Atlas Feed Mill destroyed.

Aurora, Ill.—Armory building in downtown business district damaged.

Chicago, Ill.—Service garage of Mars Oldsmobile destroyed.

Chicago, Ill.—St. Paul's Episcopal Church destroyed.

Chicago, Ill.—Building occupied by Les-Lee Electrical Co., American Legion Post 1056 and saloon, damaged. Oil stove explosion.

Chicago, Ill.—Real Brite Plating Co. damaged. Overheated boiler exploded.

Edwardsville, Ill.—Edwardsville Public Library damaged.

Kankakee, Ill.—Auto firm's three buildings damaged.

Peoria, Ill.—Peoria Metal Specialty Co., metal kitchenware manufacturing firm, damaged.

Columbus, Ind.—Columbus Process Co., radio and TV transmitter manufacturers, destroyed.

Indianapolis, Ind.—Bud Gates' Lafayette Motors Inc., destroyed.

Kokomo, Ind.—Grotto Ibn Saud Club, Ritestyle Shop and Heffner Beauty School destroyed; Carl-Ann, LaMode and Rita women's shops, Lawson's jewelry shop, Golightly haberdashery, Wilson shoe store and offices of accountants C. E. Brikinbine and Dr. Earl Shenk, damaged.

Mitchell, Ind.—Main building of Carpenter Body Works destroyed.

Orestes, Ind.—Plant and warehouse of Brunson Canning Co. damaged.

Davenport, Ia.—Building housing Nu-Way Rug Co. destroyed.

Des Moines, Ia.—Building housing Devoe & Reynolds Paint Co., Amvets Club and Tele-Visual Productions Inc., destroyed.

Spencer, Ia.—Building housing Minnick Motors Co. and apartments damaged.

Louisville, Ky.—Superior Paper Co. damaged.

Shreveport, La.—Oak flooring plant of Olin Mathieson Chemical Co. destroyed. Electrical spark.

Eliot, Me.—House on farm of George Sargent, destroyed.

INDUSTRIAL RADIO

2-WAY RADIO

Smaller, Lighter, More Powerful Equipment for all Fire Department Radio Communications

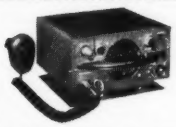
Actual demonstrations prove that pound-for-pound and size-for-size, PAK-FONES offer more reliable communications than other equipment made for fire department use. Many village radio systems are composed entirely of PAK-FONES. This superior performance is the result of the latest Heimark design and efficient circuits.

UNIVERSAL PORTABLE UNIT

The Model A PAK-FONE has self-contained batteries, may be operated from a storage battery in a vehicle, or plugged into 117 VAC house circuit. Built-in power supply and loudspeaker.

FOR THE CHIEF

A personal 2-way radio, no larger than a camera. With it, the chief can direct operations from within a burning building. Unit is protected by a heavy leather case. Waterproof handset. FIELD-FONE Model FF.



Vehicle and Base Station PAK-FONE

The Model J is the smallest complete 2-way radio for vehicle or base station use. It measures only 10" W x 9" D x 5" H. Operates from 6, 12, 24 volt systems and 117 volts A.C. Built-in loudspeaker and power supply. Minimum installation. Can be removed from vehicle in less than 1 minute.

WRITE FOR COMPLETE INFORMATION AND LITERATURE

ir INDUSTRIAL RADIO CORP. 428 N. Parkside Ave. Chicago 44, Ill.

WATER when and where you want it!

with HARODIKES Portable Canvas Water Tanks

ON THE JOB - ON THE SPOT KEEPING AMERICA GREEN

THE ECONOMICAL AND EFFICIENT WAY TO CARRY AND STORE WATER.

EXCLUSIVE FEATURES

- Self Supporting
- Easily Back-packed
- Ideal for Relay Pumping
- Easily Transported

Available in 150 & 300 gallon sizes

A WATER SUPPLY AT THE SCENE OF THE FIRE

Write TODAY for Full Information and Price List

HARODIKES INCORPORATED

NORTH DIGHTON, MASSACHUSETTS

Hinckley, Me.—Whitney Cottage, a boys' dormitory at Good Will Homes, damaged.
Naples, Me.—Home of Dr. Charles Buck destroyed.
Unity, Me.—Howard Drake garage damaged.
Westbrook, Me.—Barn and house on Everett Austin's farm, damaged.
Baltimore, Md.—Dwelling owned by Marvin Plant damaged.
East Lynn, Mass.—Building housing King Furniture and Radio Co. warehouse, Leo's Dairy Bar and St. Joseph's Total Abstinence Society headquarters, damaged.
Lenox, Mass.—Shadowbrook Novitate, Jesuit Church, destroyed.
Cass City, Mich.—Ben Franklin variety store destroyed.
Grand Rapids, Mich.—Warehouse of Gil Schaefer Distributors damaged.
Kalamazoo, Mich.—Dwelling of Edward S. Pettes, Crescent Beach, Gull Lake, northwest, destroyed.
Mt. Pleasant, Mich.—Lee Equipment Co. warehouse, a mile north, destroyed. Adjacent Dowell, Inc., Dow Chemical Co. subsidiary, damaged. Butane gas explosion.
Otsego, Mich.—Store building housing Elwood Electric Shop and dental office of George Crocker, damaged.
Petoskey, Mich.—Two buildings occupied by G. E. Beard plumbing shop, Congo Shop, Leeta Hat Shop and Alice John Rogers Shop, destroyed.
Walloon Lake, Mich.—Ted McCutcheon boat works destroyed.
St. Paul, Minn.—Six stores in Grand-Dale district damaged.
Louisville, Miss.—Louisville High School gymnasium destroyed.
Argyle, Mo.—MFA exchange building and adjoining oil station and nearby railroad facilities, destroyed.
Bucklin, Mo.—Myers recreation hall, housing Masonic Lodge quarters, destroyed.
Fulton, Mo.—Administration building of Missouri State Mental Hospital No. 1 damaged.

POWHATAN DOUBLE HYDRANT GATE VALVES

Quarter-Turn

Female inlet—2½", 3" or 3½". Male outlets—2½". Pin lug or sensible lug swivel. Rough body, painted red with polished bronze or chromium plated trim.

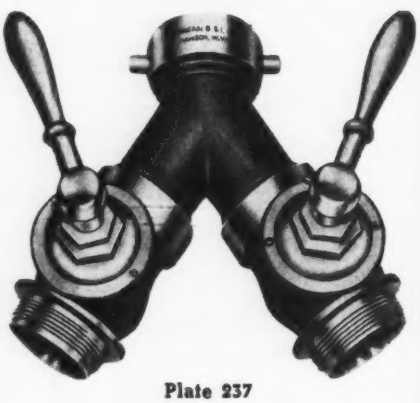


Plate 237

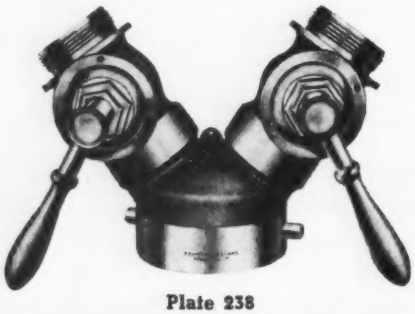


Plate 238

Short body apparatus type. Female inlet—4", 4½", 5" or 6". Male outlets 2½". Pin lug or sensible lug swivel. Rough body painted red with polished bronze or chromium plated trim.

POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94, Charles Town, West Virginia
Established 1892

Kansas City, Mo.—Building housing Thrifty Store Fixture Co., City Store Fixture Co. and Atlas Fixture Co., destroyed.
Kahoka, Mo.—John Deere Implement Store damaged. Defective wiring.
Missoula, Mont.—American Legion building destroyed.
Atlantic City, N. J.—Building occupied by Terminal Market and fire insurance firm of Charles H. Harrold, destroyed.
Long Branch, N. J.—Three buildings housing Surf Cleaners, Inc., Mills Haberdashery Store and Goodman's Fabric Shop, damaged.
New Lisbon, N. J.—Barn of Four Mile State Colony of State Mental Institution for Males, Route 72, damaged.
Perth Amboy, N. J.—Tug boat, Gertrude Loveland, moored at Pier 3, damaged.
Plainfield, N. J.—T. R. Ligowix Fuel Co. damaged.
Point Pleasant, N. J.—Arnold Hotel damaged.
Trenton, N. J.—Jefferson Elementary School damaged.
Binghamton, N. Y.—Farm home, silo and dairy barn on Ancrum Hous farm, Lake Delaware, Delaware County, destroyed. Oil heater explosion.
Buffalo, N. Y.—Lackawanna Hardware and Furniture Co. destroyed.
Kenmore, N. Y.—Brown Auto Sales and Brown Appliance Store and two apartments destroyed.
Medina, N. Y.—Two factory buildings of Authentic Furniture Co. destroyed.
Phelps, N. Y.—Richard Hart Mfg. Co., Inc. plant destroyed.
Rockaway, N. Y.—Soda-beer depot, used as warehouse for dolls and trinkets, damaged.
Schenectady, N. Y.—Chemical Materials Building at General Electric Co.'s main plant destroyed. Explosion.
Tarrytown, N. Y.—Mansion of Mrs. Mary Duke Biddle destroyed.
Wantaugh, N. Y.—Building housing Central Coal & Oil Co., Oliver Industries and Agra Lumber and Box Co. offices, destroyed.
Charlotte, N. C.—Charlotte branch of J. L. Case Tractor Co., damaged.
Raleigh, N. C.—K & L Auto Service garage destroyed. Hot water heater exploded.
Akron, Ohio—Dietz Landing, night club and boathouse, Portage Lakes, destroyed. Auto crashed into building.
Elyria, Ohio—Masonic Temple building housing city and county offices, doctors', lawyers' and accountants' offices and stores, destroyed.
Middletown, Ohio—Prior Products Inc. damaged. Welding machine sparks ignited paint and fumes.
Clinton, Okla.—Hospital building at Clinton-Sherman base, being remodeled for the Strategic Air Command, destroyed.
Clinton, Okla.—Building housing J. C. Penney store destroyed.
Drain, Ore.—Wesley Cafe and Thatcher Cleaning Co. destroyed.
Florence, Ore.—Patten Blinn Lumber Co. destroyed.
Klamath Falls, Ore.—Mallory Super Market destroyed.
Pendleton, Ore.—Maintenance shops of Morrison Knudsen Co., damaged. Explosion.
Portland, Ore.—M & M Woodworking Co. damaged. Overheated dryer.
Portland, Ore.—Portland Gas and Coke damaged. Tar fire.
Devon, Pa.—Dwelling on estate of John A. Yohn, near here, and barn, damaged.
Easton, Pa.—Two wings and tower clock of Lafayette College destroyed.
Harrisburg, Pa.—Derrickson Paper Co., Inc. damaged.
North Wales, Pa.—North Wales Elementary School destroyed. Basement switch boxes.
Burton, S. C.—Packing house of John Trask destroyed.
Charleston, S. C.—W. T. Grant Co. department store damaged.
Dillon, S. C.—Dillon Motor Co. destroyed.
Clinton, Tenn.—Sulphur Springs Elementary School destroyed. Lightning struck power line.
Kingsport, Tenn.—Building housing Kingsport Office Supply Co. and Snack Shop, damaged.
Nashville, Tenn.—General Shoe Corp. warehouse damaged.
East Dallas, Tex.—Main plant of Bell Cleaning and Laundry Co. and Tom Thumb super market, damaged.
Ogden, Utah—Lewis Elementary and Junior High School destroyed.

Clarksville, Va.—Carter M. Willis, clothing store, destroyed. Home & Office Supply Co., furniture store, damaged.
Porter, Wash.—Boling store service station destroyed. Explosion.
Richland, Wash. — Pennywise Drugstore of Thrifty Drug chain, destroyed.
Seattle, Wash.—Selcome Hotel damaged. Careless smoker.
Vancouver, Wash.—Five units of Lewis and Clark Motel destroyed.
Vancouver, B. C.—British Columbia Paper Co., excelsior plant, destroyed.
Edmundston, N. B.—Garage owned by Patrick Fournier and 16 automobiles destroyed.
Kitchener, Ont.—Windsor Hotel destroyed.
Peterborough, Ont. — Jackson's Department Store, insurance office, tailor shop, second-hand store and apartments, destroyed.
Iberville, Que.—Sacred Heart Church, 23 miles southeast of Montreal, destroyed.
La Tuque, Que.—Downtown movie theatre and adjoining building housing drug store and apartments, destroyed.

MANUFACTURERS' NEWS

Continued from page 328

cessful steam fire engine, and Ahrens-Fox rested with one Chris Ahrens, who began his work as an apprentice with Mr. Latta and became superintendent of the fire engine construction.

Mr. Latta retired from the manufacturing of fire engines in 1868, and Mr. Ahrens took over the business and established a factory for the exclusive production of steam fire engines. Mr. Ahrens introduced new versions of Mr. Latta's steam engine. One of the problems which he successfully solved was the problem of quick steaming for the steam engines. He patented a device which allowed hot water to remain in the boilers. This device remained tops in fire fighting equipment until the passage of steam engines.

Two of Mr. Ahrens' sons joined forces with Charles H. Fox, formerly an assistant chief of the Cincinnati Fire Department, and thus forming the Ahrens-Fox name. Up until this time the steam equipment was under the name of just Ahrens. Soon after Mr. Fox joined the company a change from steam to motor driven fire apparatus was made, and Ahrens-Fox continued its leadership with their piston type motor driven pump.

In 1919 they also introduced the booster system as it is now known. Prior to the introduction of the Ahrens-Fox booster system with a special water tank and special pumping connections, the soda and acid chemical engines had been the accepted method for fighting the smaller fires.

Changing conditions made the front mounted piston pump lose its desirability. Although the Ahrens-Fox front mounted piston type pump is possibly still without peer for convenience in drafting water, this is not as desirable as it previously was due to the increased number of fire hydrants and improved water systems. Ahrens-Fox then brought out a midship mounted pump with the engine forward which was produced with various body styles until the year 1955. The C. D. Beck & Company, Inc. started producing this entire line of Ahrens-Fox equipment in the fall of 1953.

The entire design of the Ahrens-Fox

Continued on page 353

Picture Window Vision for Greater Safety!

SCOTTORAMIC FACE MASK

Like looking through a picture window, the SCOTTORAMIC Face Mask with its full wrap around safety plastic lens gives unobstructed vision so important to safety in firefighting.

Special double lip face seal assures greater comfort and protection. Non-fogging is assured by the circular air-washing action of the cool air. Gives air conditioned comfort. Eliminates that "closed-in" feeling caused by tunnel vision of old style masks. May be worn over some types of glasses.

Bring your self-contained breathing equipment up to date with SCOTTORAMIC Face Masks. See your nearest Scott Dealer . . . or write us direct for complete information.

SINCE 1932 Scott THE SAFETY-FOR SEATTLE

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

215 ERIE STREET LANCASTER, N. Y.

Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 15 West 57th Street, New York 19, N. Y.

RURAL FIRE PROTECTION

Continued from page 313

The farm fire department personnel meets periodically with the municipal firemen and they are drilled by the latter. The apparatus is housed in the city fire station, and upon receipt of a rural alarm at headquarters, two men, usually an officer and driver, respond with the rural fire truck.

The telephone company cooperates and calls the rural firemen (beginning with nearest squad to the fire) and they respond direct to the scene of the incident. Usually by the time the apparatus arrives, a satisfactory working crew is available for fire fighting. In some up-to-minute departments commercial radio broadcasts of fire calls are made to supplement other methods of notifying personnel.

Housing: In starting a rural fire department it may be necessary to begin with the simplest of fire stations. This may be enlarged as means permit, but it is well at the outset to plan and build for future growth. Much will depend also upon whether the fire house is to serve as a community center and the extent to which the fire department will desire meeting rooms, dormitories to sleep personnel, etc. Care should be taken to build the station sufficiently large to accommodate existing and possible future fire apparatus. If it is necessary to use a public garage until the fire station is completed, space for the apparatus should be partitioned off from the rest of the garage to prevent interfering with response and pilfering of equipment. The fire station, particularly the rural one, should be constructed of fire-safe materials.

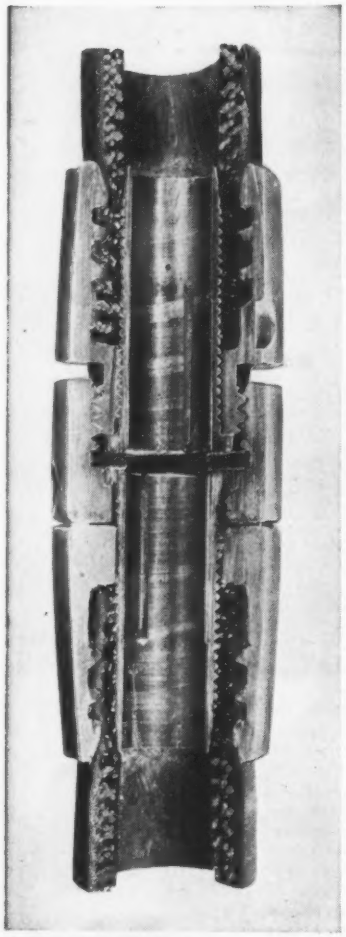
Communications: Methods of receiving alarms vary as do arrangements for transmitting them, and alerting volunteer firemen at home and at work. Some 24-hour-watch service should be maintained if at all possible. The problem is not as serious with the paid or part paid departments, but where the personnel are all volunteers and the fire station may be locked up except for the time when the apparatus must respond, it is essential that someone near the fire station (who usually is the driver) should be notified. Where fire service radio is installed, it is possible to sound fire alarms via that medium (through remote control) and to turn on station lights and unlock its doors, as well as activate a public alarm. The advent of the telephone dial system has increased the difficulty of summoning and notifying firemen.

Apparatus and Equipment: There are many different types of apparatus used for rural fire service, but generally the most widely employed is the triple combination pumper, having pump booster tank, hose, and short ladders. Inasmuch as it is usually essential to carry some water to the average rural fire to make a fast attack, or to protect exposures, booster tanks of not less than 300 gallons with booster hose, fog nozzles, etc., are recommended. There are various water carriers also used by departments to supplement or augument supplies carried on pumpers.

Included in the equipment of the rural fire department should be one or more portable pumps for lifting water to supply pumpers or tanks. Lighting and respiratory protective equipment also should be included.

The ultra-modern fire truck carries proportioning equipment to add wetting agents to the hose stream, thus multiplying the effectiveness of the water supply. It may also be fitted with a multi-stage pump to deliver high pressure fog as well as low velocity fog or streams at standard pressures.

Beware Overloading: A word of warning concerning overloading farm



UNRETOUCHED PHOTO

4 REASONS WHY YOU SHOULD SPECIFY BAR-WAY STREAMLINED HIGH PRESSURE HOSE COUPLINGS...

1. **SAFETY**—The coupling becomes the *strongest part of the hose line.* Tested to 3000 pounds pressure and 500 pounds pull.
2. **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
3. **FLEXIBILITY** — Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
4. **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL.

NOW AVAILABLE ¼" hexagon or depressed eye couplings designed for U. S. A. crash truck requirements. You may now specify these couplings—carried in factory stock. Send for free pamphlet which gives detailed specifications for all types of pressure hose.

BAR-WAY MFG. CO., STAMFORD, CONN.

fire fighting apparatus (particularly pumpers and tankers): Auxiliary water carriers converted from milk or fuel trucks should be baffled and the load weight properly distributed.

Records: Certain records and data are essential to rural fire fighting. The first is the problem of locating the fire and the best routes to it, from the information transmitted the fire department. Various types of location and route charts have been devised to facilitate this, some of which have been described in FIRE ENGINEERING. In general, the practice is to lay out the area to be served by districts or quadrants, on sturdy cards (standard filing cards about 5 x 8 inches are desirable), on one side of which is a map of the district or quadrant, and farm or other property to be served; and on the other, fundamental data concerning the property, occupants, etc.

The location and route cards are used by many township and rural fire departments to speed getting equipment to the fire, and to provide essential information concerning the risk for fire fighters in pre-planning for fire in such property. In addition to indicating the shortest and best route to a given location, the cards enable the officer on the scene to know instantly how many people live in the house; where the water supply, if any, is located; the location of the main electric switch, attic entrance, and special hazards that may be encountered.

Inspections: In gathering and preparing the location and route information, members of the department call upon the respective property owners and occupants to get the facts firsthand. This affords an excellent opportunity to suggest and effect inspection of buildings and other hazards, water supplies, etc., and to gain the good will of those concerned with the survey and the protection. Naturally before-mentioned basic data should be kept up to date.

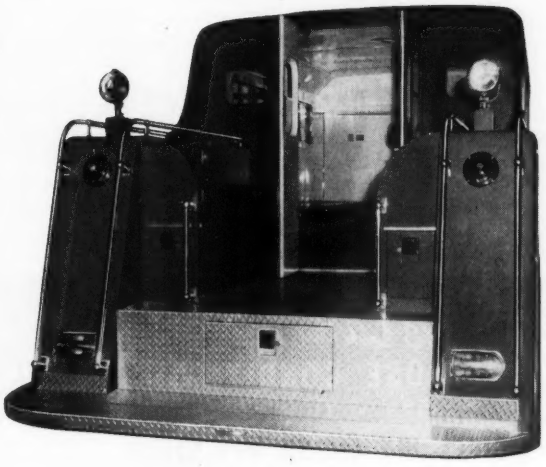
AUDITORIUM FIRE

Continued from page 317

Although complete final data are lacking on the origin of the fire as this is written, investigators attributed the cause to defective electrical connections. One report of the holocaust stated a short circuit had been found in a wire leading to a neon light transformer in the kitchen ceiling (the building was outlined in neon lights). Twenty-four other transformers reportedly were found to be without fault.

It has been determined that the fire

YOUR EMERGENCY will be easier to care for



in a body by SHARPSVILLE

This is the car of many uses—and it's built to **your** specifications. Features include: ambulance space—air controlled interior—built-in cabinets—sliding double windows—riding comfort, and many others.

For full particulars write, wire or phone

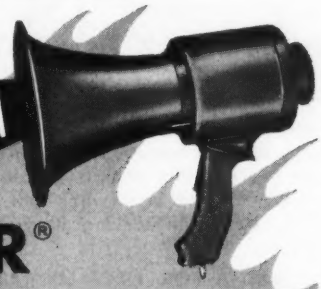
Sharpsville

STEEL FABRICATORS, Inc.
SHARPSVILLE, PA.

BUILDERS OF SERVICE, CRASH AND LADDER TRUCKS • VOLUME AND HIGH-PRESSURE PUMPERS • SQUAD AND EMERGENCY CARS • STORAGE TANKS

YOUR VOICE . . .

CUTS THROUGH THE DIN



WITH AUDIO HAILER®

Portable, self-contained, electronic megaphone. Ask your supply dealer to demonstrate—or write for brochure.

AUDIO EQUIPMENT CO., INC.—Dept. F, Great Neck, N. Y.

started near a transformer and was first noticed about 5:00 p.m. at the rear of, and outside, the kitchen off the main building. A "white smoke" appeared to emanate from between the ceiling joists of the kitchen. Several women working in the kitchen noticed the smoke and a small flame emitting between the cracks in the ceiling. A man working the outside bar also noticed flames licking at the eaves on the exterior.

Employes and visitors used a garden hose that was hooked up nearby in an effort to extinguish this outside fire. They stood on the fence and on a pickup truck in the effort to get nearer the fire, but they were warned there was an open electrical connection in the area and they might be electrocuted.

Upon notification of the fire, the man in charge of the kitchen secured a carbon dioxide extinguisher and tried to operate it on the ceiling fire. About then — 5:05 p.m. — traces of smoke and flame appeared around a gas heater in the main auditorium. Until this time the majority of those at the oyster roast were unaware of the episode, nor had an alarm been turned in to the fire department.

About 5:05 p.m., the management was notified and an employe climbed a ladder to a trap door leading into the false ceiling space and found fire. He at once closed it and notified a man to call the fire department.

The phone call was put through via Public Service to the Brooklyn Fire Department, which received it at 5:08 p.m.

Just before this was done, and while the man was en route to the phone, an off-duty Baltimore fireman, Charles Ecker of Ladder 28, attempted to fight the fire. His testimony reads: "When I first saw the smoke I grabbed a ladder in the corner of the hall and climbed to the ceiling. I raised a trap door in the ceiling just a couple of inches, and a ball of fire shot out and hit me in the face, knocking me off the ladder." Ecker was badly burned.

Witnesses also testify that there was a mild explosion of some type in the ceiling space which caused fire and smoke to be pushed out around where ceiling and walls joined. It was then that panic broke loose and people started to push for the outside openings. Once it had broken out of the ceiling space, and given the benefit of the drafts occasioned by the opening of the large garage type door and some windows, the flames raced across the accoustical composition ceiling like wildfire—one man likened it to burning of wooden chicken crates—and reached the opposite end of the structure before many in the throng could move.

Pandemonium and panic rampant

The confusion and panic were not precipitate. The pandemonium built up to a crescendo as the fire flared across the ceiling. Then there were all the elements of mass shock and movement. All witnesses agree there was a frenzied rush to get out through the main exits. Several of the smaller exits apparently were not used by the public. Those close to the exits, and the very few who started out at the first rumored report of a fire, made good their escape.

Men, women and children were swept along in the tide toward the exits, some going down to be trampled by the mob which "acted like beasts," to quote witnesses. A few of the more cool-headed men jumped on tables and tried to calm the milling crowd but their efforts were fruitless. Some of those at the rear began hurling chairs at windows. Men tried to break them also with their fists, many being badly cut in the process. The larger windows were framed in metal and so

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hung as to make it difficult to use them for escape. Other windows were located higher up and not readily reachable. Nevertheless, many managed to escape through the windows, including some children who were pushed out by parents.

It has already been said that a number of those who early managed to escape attempted to re-enter the burning structure to repossess valuables. It has been definitely established that at least two of the ten victims had successfully reached the outside and then returned, for some reason. Confusion was also heightened by efforts of some of the customers who were outside the structure when the rush began, to gain the inside to locate friends, relatives or possessions.

Another and serious contributing element was the extinguishment of all inside lights about 5:08 p.m. When the lights went out in the building, a large neon sign on the exterior continued to operate and it is believed that many of the women observed this light through the smoke and mistook it for the exit sign. With the sudden stoppage of interior illumination and only the light of the spreading flames to light the scene, the confusion and panic increased. All this took place before any firemen had reached the scene.

The editors are grateful for the cooperation of the following in the preparation of this report: Chief Harry Klasemier, Anne Arundel Fire Prevention Bureau, who figured in the investigation; Deputy Chief Lee Cockey, Baltimore County Fire Department and Chief Michael Lotz, Baltimore City Fire Department who dispatched aid, and to Irving Johnson, Takoma Park, Md., and other correspondents who supplied data.

Tax Unit Rules on Fireman's "Home"

According to a ruling published in the Internal Revenue Bulletin, February 18, 1956, a fireman's home is not his home for tax purposes. His home for tax purposes is his firehouse.

The ruling says: "the tax or business 'home' of a fireman as in the case of other taxpayers, is held to be his principal or regular post of duty." In this case it is his firehouse or wherever he may be assigned, even though he may be on twenty-four-hour duty.

The ruling prohibits firemen from deducting from income tax the costs of meals taken on duty because these represent "nondeductible living expenses."

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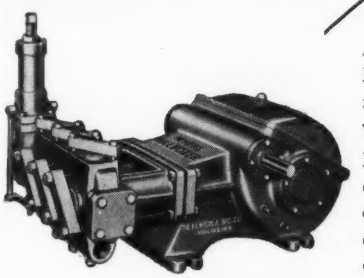

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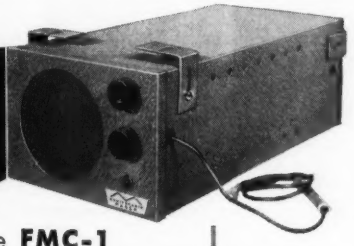

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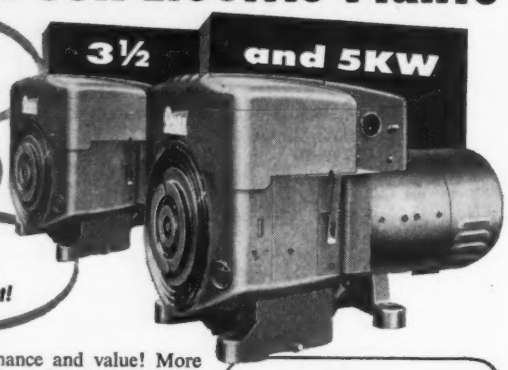

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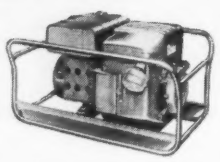

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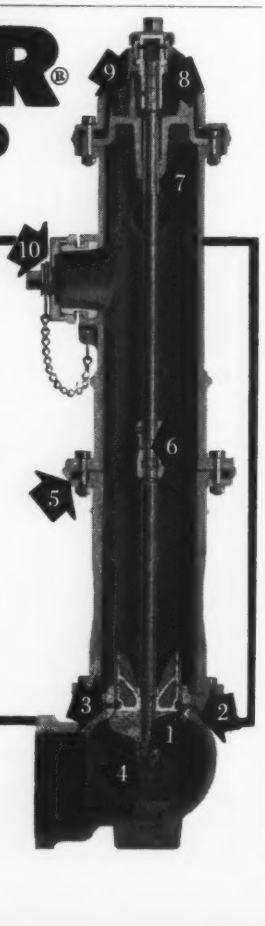

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SALVAGE

Continued from page 326

phase of salvage and should be given considerable thought. Basements are frequently the central location of the source of power need by occupants of a building in order to keep them in business.

Basements usually contain the main electrical power supply which, if interrupted, can cause complete shutdown of operation.

They are also the location of heating facilities which, if impaired, may have far-reaching effect on the ability of the concerns or residents occupying the structure to continue operations. Lack of heat makes the building unfit for human occupancy during the heating season. It permits freezing of water pipes, sprinkler systems and storage tanks. It has adverse effects on goods which cannot be subjected to low temperatures, but which are often stored in basements. And lack of heat to dry out a building usually results in excessive warping and possible formation of ice within the structure which later melts to cause unexpected and unnecessary damage.

Also subject to damage through basement flooding are refrigeration systems, particularly motors and compressors. Salvage operational reports indicate that interruption of refrigeration in certain occupancies has caused damage in excess of actual fire losses.

Mention has previously been made of elevator motors and equipment. The loss of transportation in a sizable building can not only seriously hamper fire fighters and salvagement but it can cause costly delays to the occupants.

Storage is indigenous with basements. Many below-surface areas in modern structures have large storage facilities, the contents of which would suffer extensive damage if water control in these sub surface areas was neglected.

A final detail is exposures. The fire forces may keep a fire from entering adjoining buildings above the street level, but if water is allowed to accumulate and reach excessive heights in basements, it will penetrate through walls and partitions quite possibly causing severe damage to the contents and facilities of adjoining occupancies.

The excellent diagrams used in this chapter are the work of Sgt. George Post, of the New York Fire Patrol.

Convention Dates

Apr. 23-27—**Oklahoma State Fire School.** Annual meeting, Stillwater, Okla. Director, R. J. Douglas, Head, Fire Protection Department, A. & M. College, Campus Fire Station, Stillwater, Okla.

Apr. 23-27—**Minnesota State Fire School.** Annual meeting, University of Minnesota Farm Campus, St. Paul, Minn. Director, Dr. J. O. Christianson, Director Agriculture Short Courses, University of Minnesota, St. Paul 1, Minn.

Apr. 23-27—**International Arson Investigator's Seminar.** Annual meeting, Purdue University. For information, address Professor Shelby Gallien, Seminar Director, Public Safety Institute, Purdue University, Lafayette, Ind.

Apr. 23-27, June 4-8, July 23-27, Sept. 24-28—**Pennsylvania Fire School — Standard Fire Fighting Course,** to be held at Lewistown, Pa. Director, Arthur Espey, Pennsylvania Fire School, Lewistown, Pa.

April 28—**New Jersey State Fire Chiefs' Association.** Spring meeting, Madison, N. J. Secretary, Clarence H. Dougal, 9 Girard Avenue, East Orange, N. J.

May 6—**Nebraska State Fire School.** Regional meeting, Irving, Neb. Director, Otto B. Johannes, 2604 - 12th Street, Columbus, Neb.

May 7-8—**Georgia State Fire College.** Officer Training Course and Fire College, #7 Fire Station, Atlanta, Ga. Director, Harry Phillips, 46 Courtland Street, S. E., Atlanta 3, Ga.

May 7-9—**Eastern Association of Fire Chiefs.** Annual meeting, Rochester, N. Y. Secretary, Chief Edwin J. Clark, Box 328, Wayne, Pa.

May 7-10—**North Carolina Fire College.** Annual meeting, Salisbury, N. C. Director-Conductor, Chief Charles L. Burkett, Fire Headquarters, Salisbury, N. C.

May 7-11, June 18-22, Aug. 27-31, Oct. 8-12—**Pennsylvania Fire School — Advanced Fire Fighting Course,** to be held at Lewistown, Pa. Director, Arthur Espey, Pennsylvania Fire School, Lewistown, Pa.

May 12—**Illinois Fire Chiefs Association.** Spring conference, Danville, Ill. Secretary, Chief Ray Miller, Fire Headquarters, Peoria, Ill.

May 19—**Keystone State Fire Chiefs Association.** Spring meeting. Oakland Fire Company Station, Johnstown, Pa. For information, contact Lewis M. Atkinson, Recording Secretary, Malvern, Pa.

May 21-25—**California Fire Service Instructors Conference.** Annual meeting, Fresno, Cal. Director, T. S. Ward, Supervisor of Fire Training, State Department of Education, 721 Capitol Avenue, Sacramento 14, Cal.

May 21-25, July 9-13, Sept. 10-14, Oct. 22-26—**Pennsylvania Fire School—Operation and Maintenance Fire Apparatus Course,** to be held at Lewistown, Pa. Director, Arthur Espey, Pennsylvania Fire School, Lewistown, Pa.

May 22-23—**Purdue Industrial Fire Control Seminar.** Annual conference, Purdue University, Lafayette, Ind. For information contact the Public Safety Institute, Division of Adult Education, Purdue University, Lafayette, Ind.

May 22-25—**Iowa State Fire School.** Annual meeting, Iowa State College, Ames, Ia. Director, Keith Royer, Supervisor Firemanship Training, 110 Marston Hall, Iowa State College, Ames, Ia.

May 28-June 1—**Alabama State Fire College.** Annual meeting, University, Ala. Director, M. O. Hulsey, Assistant State Supervisor of Trade and Industrial Education, P. O. Box 1813, University, Ala.

June 3-6—**New York State Association of Fire Chiefs.** Annual meeting, Schroon Manor, Schroon Lake, N. Y. Secretary, Ward A. Bohner, Fire Headquarters, Utica 2, N. Y.

June 4-5—**Georgia State Fire College—Instructors' Course,** to be held at #7 Fire Station, Atlanta, Ga. Director, Harry Phillips, 46 Courtland Street, S. E., Atlanta 3, Ga.

June 4-8—**National Fire Protection Association.** Annual meeting, Boston, Mass. General Manager, Percy Bugbee, 60 Batterymarch Street, Boston 10, Mass.

June 5-7—**Kentucky Fire School.** Annual meeting, University of Kentucky, Lexington, Ky. Director, John L. Thompson, Assistant Man-

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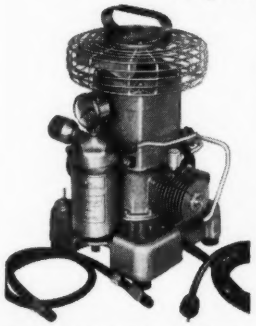

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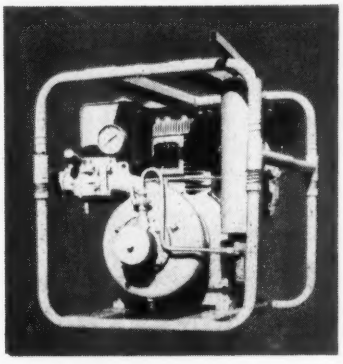

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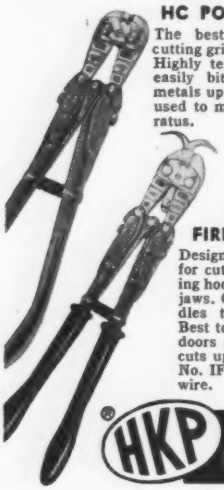

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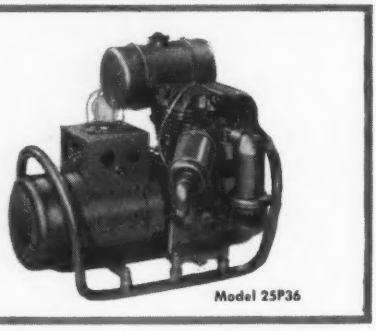

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June 7-9—**Idaho State Fire School.** Annual meeting, Boise, Ida. For information, write Fire Marshal W. F. Roach, Fire Prevention Bureau, Boise, Ida.

June 8-10—**Michigan State Firemen's Association.** Annual meeting, Port Austin, Mich. Secretary-Treasurer, Stirling Garrow, 816 Oak Street, Port Huron, Mich.

June 9—**Central Adirondacks Firemen's Association.** Annual meeting and drill contests with parade, Inlet, N. Y. Secretary, Floyd Simons, Wells, N. Y.

June 9-10—**Central Western Firemen's Association.** Annual fire school, Brookville, Ohio. Chairman, W. H. Cheesman, 309 Briarcliff Road, Dayton 5, Ohio.

June 10—**Nebraska State Fire School.** Regional meeting, Deshler, Neb. Director, Otto B. Johannes, 2604 - 12th Street, Columbus, Neb.

June 10-13—**Oregon Fire Chiefs Association.** Annual meeting, Seaside, Ore. Secretary, Chief E. L. Smith, City Hall, Salem, Ore.

June 11-13—**New Mexico State Firemen's Association.** Annual meeting and school, Las Vegas, N. M. Director, John B. Woodall, Deputy State Fire Marshal, State Department of Insurance, Santa Fe, N. M.

June 11-14—**Illinois Fire College.** Annual meeting, University of Illinois, Urbana, Ill. For information, contact R. W. Alsip, Box 8, Champaign, Ill.

June 11-15—**California Fire and Arson Investigation Short Course.** Annual meeting, University of California, Berkeley. Director, T. S. Ward, Supervisor of Fire Training, State Department of Education, 721 Capitol, Sacramento 14, Cal.

June 13-14—**Indiana Fire Department Instructors' Conference.** Annual meeting, Indianapolis, Ind. For information contact the Public Safety Institute, Division of Adult Education, Purdue University, Lafayette, Ind.

June 16-17—**Northeastern Pennsylvania Volunteer Firemen's Federation.** Annual fire school, Honesdale, Pa. Fire School Chairman, James H. Oakey, Box 67, Tobyhanna, Pa.

June 18-22 (tentative)—**Mississippi State Fire School.** Annual meeting, Mississippi State College, Starkville, Miss. Director, J. I. Fetters, Administrative Assistant, University of Missouri, Room 101, Building T-11, Columbia, Mo.

June 18-22—**South Dakota Firemen's Association.** Annual meeting and fire school, Brookings, S. D. Director, J. I. Fetters, Administrative Assistant, University of Missouri, Room 101, Building T-11, Columbia, Mo.

June 19-22—**Michigan Fire College.** Annual meeting, University of Michigan, Ann Arbor, Mich. Director, Francis Hartman, Supervisor of Firemanship Training, 4524 Administration Building, University of Michigan, Ann Arbor, Mich.

June 20-22—**Montana State Volunteer Firemen's Association.** Annual meeting, Butte, Mont. Convention Chairman, William R. McDonel, P. O. Box 763, Butte, Mont.

June 20-23—**Colorado State Firemen's Association.** Annual convention and fire school, Durango, Colo. Director, Lou Gibbs, 1331 Garfield Avenue, Loveland, Colo.

June 21-23—**Utah Firemen's Training School.** Annual meeting, Salt Lake City, Utah. Director, Assistant Chief D. E. White, Salt Lake City Fire Department, 140 East First Street South, Salt Lake City, Utah.

June 21-23—**Hudson Valley Volunteer Firemen's Association.** Annual meeting and parade, Lake George, N. Y. Secretary, Charles M. Fales, 92 Clove Avenue, Haverstraw, N. Y.

June 23—**New Jersey State Fire Chiefs' Association.** Summer meeting, Keyport, N. J. Secretary, Clarence H. Dougal, 2 Girard Avenue, East Orange, N. J.

July 23-25—**Wisconsin State Fire Chiefs' Association.** Annual meeting, Wausau, Wis. Secretary-Treasurer, Chief Douglas J. Dunlop, 1463 Underwood Avenue, Wauwatosa 13, Wis.

June 25-26—**Saskatchewan Association of Fire Chiefs.** Annual meeting, North Battleford, Sask. For information, contact Chief Norman Carsewell, Fire Headquarters, North Battleford, Sask.

June 25-28—**New England Association of Fire Chiefs.** Annual meeting. The Wentworth, Portsmouth, N. H. Secretary-Treasurer, John

O'Hearn, 206 Mt. Auburn Street, Watertown 72, Mass.

June 27—**General Western Firemen's Association.** Annual meeting, Germantown, Ohio. Secretary, Roger C. O'Donnell, Covington, Ohio.

June 28-30—**Southern New York Volunteer Firemen's Association.** Annual meeting, drill contests and parade, Islip, N. Y. Secretary, Ernest Stoll, Snedecor Avenue, Bayport, N. Y.

June 28-30—**Northern Central New York Volunteer Firemen's Association.** Annual meeting, Manchester, N. Y. Secretary, Samuel J. Pitcher, 35 Dayton Street, Rochester 21, N. Y.

June 29-July 1—**International Fire Buff Associates.** Annual meeting, Newark, N. J. For information contact the host association, The Bell and Siren Club, Inc., William E. Conradi, Secretary, 86 Wakeman Avenue, Newark 4, N. J.

July 8-13—**Texas Firemen's Training School.** Annual meeting, Texas A & M College, College Station, Tex. Director, Henry D. Smith, Acting Chief, Firemen's Training School, Engineering Extension Service, A & M College, College Station, Tex.

July 9-13—**Virginia Fire Training School,** to be held at the College of William & Mary, Williamsburg, Va. For information contact Chief Elliott W. Jayne, Williamsburg Fire Department, 106 South Henry Street, Williamsburg, Va.

July 9-10—**Georgia State Fire College—Arson Investigators' Course,** to be held at #7 Fire Station, Atlanta, Ga. Director, Harry Phillips, 46 Courtland Street, S. E., Atlanta, Ga.

July 12-14—**Central New York Firemen's Association.** Annual meeting, drill contests and parade, Oneonta, N. Y. Secretary, George W. Lang, 10 Ellwood Avenue, Cortland, N. Y.

July 15—**Nebraska State Fire School.** Regional meeting, Scottsbluff, Neb. Director, Otto B. Johannes, 2604 - 12th Street, Columbus, Neb.

July 18-21—**Washington Fire Training Conference.** Annual meeting, Everett, Wash. Director, Captain J. R. Cook, Conference Supervisor, Washington State Firemen's Association, 1712 Harvard Avenue, Seattle, Wash.

July 20-21—**Hudson-Mohawk Volunteer Firemen's Association.** Annual meeting, drill contests and parade, Rensselaer, N. Y. Secretary, Harold A. Gass, 3058 Albany Street, Schenectady 4, N. Y.

July 21—**Central North Shore Volunteer Firemen's Association.** Annual invitation drill and parade, Central Islip, N. Y. For information, contact Captain John S. Brewer, 96 Carleton Avenue, Central Islip, N. Y.

July 23-25—**Western New York Volunteer Firemen's Association.** Annual meeting, emergency first aid tournament, drill contests and parade, Batavia, N. Y. General Convention Chairman, Fred G. Wolf, P. O. Box 130, Batavia, N. Y.

July 23-27—**West Virginia State Fire School.** Annual meeting, Morgantown, W. Va. Director, R. E. Hanna, Jr., Supervisor, Fire Service Extension Schools, West Virginia University, Morgantown, W. Va.

July 24-26—**Central Missouri Fire Conference.** Annual meeting, University of Missouri, Columbia, Mo. Director, J. I. Fetters, Administrative Assistant, University of Missouri, Room 101, Building T-11, Columbia, Mo.

July 26-28—**Montana State Firemen's Association.** Annual meeting, Livingston, Mont. For information, write Assistant Chief C. C. Welling, Fire Headquarters, Livingston, Mont.

July 27-28—**New York-Penn Firemen's Association.** Annual meeting, Horseheads, N. Y. General Chairman, Chief George Sullivan, Horseheads, N. Y.

Aug. 1-3—**Southwestern Association of Volunteer Firemen.** Annual meeting and parade, Gowanda, N. Y. Secretary, Samuel J. Beckman, Versailles Road, R. F. D. No. 1, Lakeview, N. Y.

Aug. 6-10—**Pennsylvania Fire School.** Annual meeting, Lewistown, Pa. Director, Arthur Espey, Pennsylvania Fire School, Lewistown, Pa.

Aug. 6-31—**Florida State Fire College.** Four weekly sessions, Ocala, Fla. Director, W. H. Barnett, Superintendent Florida State Fire College, P. O. Box 785, Ocala, Fla.

Aug. 12—**Nebraska State Fire School.** Regional meeting, Ansley, Neb. Director, Otto B. Johannes, 2604 - 12th Street, Columbus, Neb.

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FLOMAX **Open Adaptor construction protects your engine from stray pumpage. Also provides plenty of room to work and see when servicing pump.**

FLOMAX pumps are	***FLOMAX*** pumps have
Self-Cleaning	Replaceable Wear Plate
Non-Clogging	Removable Inlet and Outlet Flanges
Quick Priming	Higher Capacities and Higher Heads

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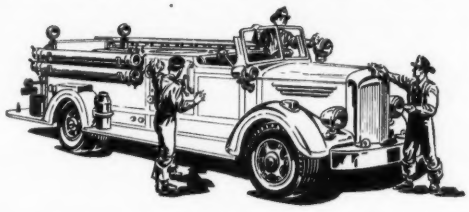
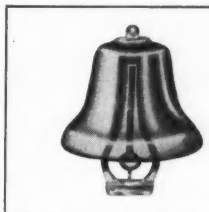
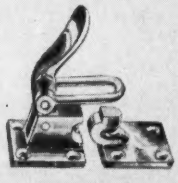
MARINE PRODUCTS COMPANY

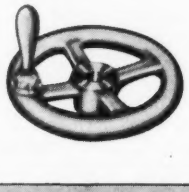
515 Lycaste Ave., Detroit 14, Michigan

WHY DO MOST FIRE EQUIPMENT MANUFACTURERS—









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For Fittings Made to Their Specifications?

The reason is — knowhow. Our modern and complete facilities enable us to start from manufacturers' blueprints and develop special fittings all the way to the final brilliant finish. Manufacturers know, too, ATTWOOD quality is rigidly controlled, while ATTWOOD'S dependability has been proven countless times in actual service. Check with us on your special requirements.

ATTWOOD BRASS WORKS

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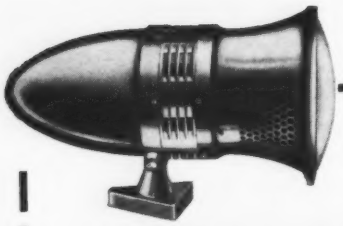

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for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

STERLING SIRENS

- **HANDSOME**
- **RUGGED**
- **RELIABLE**

Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

MODEL 20 SIRENLITE
FIRE ALARM SIREN
for Volunteer Systems

Quick acceleration, power-plus . . . Model M really gets the boys out in a hurry! Used by championship companies from coast to coast. A dependable, heavy-duty siren built of the finest materials throughout.

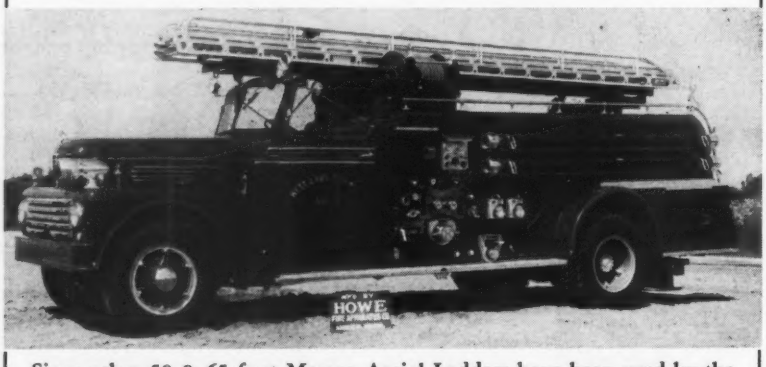
Complete line of Siren Equipment • *Bulletin on Request*

THE STERLING SIREN FIRE ALARM CO., INC.
10 BARTLETT ST., ROCHESTER 8, N. Y.

another

MEMCO AERIAL LADDER

The 50 foot Memco Aerial Ladder, shown in the picture below, was incorporated into a "Defender" pumper for the Westlake Fire Department, Erie, Pennsylvania, by the Howe Fire Apparatus Company, Anderson, Indiana.



Since other 50 & 65 foot Memco Aerial Ladders have been used by the Howe Company in apparatus destined for "far away places"—Haiti and Saudi Arabia—their confidence in Memco would seem to be complete.

for details write

MEMCO AERIAL LADDER COMPANY
1007 N. W. 36th Street
Oklahoma City 18, Oklahoma

Aug. 13-15 — **University of Wisconsin Fire School.** Annual meeting, University of Wisconsin, Madison, Wis. Director, James J. Lichty, Supervisor, Business Institutes, University of Wisconsin, P. O. Box 2098, Madison 5, Wis.

Aug. 13-17—**Pennsylvania Fire School—Fire Department Officership Course,** to be held at Lewistown, Pa. Director, Arthur Espey, Pennsylvania Fire School, Lewistown, Pa.

Aug. 20-24—**Tennessee State Fire Service School.** Annual meeting, Mid-Tennessee State College, Murfreesboro, Tenn. Director, S. Elkins, Fire Department Instructor, State Board for Vocational Education, 215 Chestnut Street, Chattanooga, Tenn.

Aug. 21-24—**Pacific Coast Inter-Mountain Association of Fire Chiefs.** Annual meeting, Sacramento, Cal. Secretary-Treasurer, Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Sept. 3-4—**Georgia State Fire College—Inspectors' Course,** to be held at #7 Fire Station, Atlanta, Ga. Director, Harry Phillips, 46 Courtland Street, S. E., Atlanta 3, Ga.

Sept. 4-7—**Maryland Short Course for Firemen.** Annual meeting, University of Maryland, College Park, Md. Director, Robert C. Byrus, Director of Fire Service Extension, Box 85, University of Maryland, College Park, Md.

September 9—**Southern Wisconsin and Northern Illinois Firemen's Association.** Annual school, Savanna Ordnance Depot, Savanna, Ill. For further information, write program secretary, Kenneth Holt, Cassville, Wis.

Sept. 10-14—**Ohio State Fire School,** Annual meeting, Ohio State University Campus, Columbus, Ohio. Director, Dr. Harvey Walker, Ohio State University, Columbus, Ohio; Co-Director, Wayne Jenkins, Chief of Fire Prevention, State Fire Marshals' Office Wyandotte Building, Columbus, Ohio

Sept. 10-14—**Virginia State Fire School.** Annual meeting, Norfolk, Va. Director, Clay A. Easterly, Fire Marshal, P. O. Box 1112, Martinsville, Va.

Sept. 11-14—**Indiana State Fire School.** Annual meeting, Purdue University, Lafayette, Ind. Director, Professor Shelby Gallien, Public Safety Institute, Purdue University, West Lafayette, Ind.

Sept. 14-15—**Piedmont Fire Safety Seminar.** Annual meeting, Winston-Salem, N. C. Chairman, W. G. Dunham, c/o Winston-Salem Chamber of Commerce, Winston-Salem, N. C.

Sept. 16—**Nebraska State Fire School.** Regional meeting, Imperial, Neb. Director, Otto B. Johannes, 2604 - 12th Street, Columbus, Neb.

Sept. 17-20—**International Municipal Signal Association.** Annual meeting, Denver, Colo. Secretary, Irvin Schulsinger, 130 West 42nd Street, New York 36, N. Y.

Sept. 18-19—**Iowa Firemen's Association.** Annual meeting, Red Oak, Ia. Secretary-Treasurer, Carl H. Fuchs, 2749 Kinsey Avenue, Des Moines, Ia.

Sept. 20-22 — **Westchester County Volunteer Firemen's Association.** Annual meeting and parade, North Tarrytown, N. Y. Secretary, John R. Bailey, Box 1, Baldwin Place, N. Y.

Sept. 30—**Nebraska State Fire School.** Regional meeting, Atkinson, Neb. Director, Otto B. Johannes, 2604 - 12th Street, Columbus, Neb.

Oct. 4-6—**Ohio Fire Chiefs' Association.** Annual meeting, Hamilton, Ohio. General Chairman, Chief George Schlotterbeck, Fire Headquarters, Hamilton, Ohio.

Oct. 8-9—**Georgia State Fire College—Fire Engineers' Course,** to be held at #7 Fire Station, Atlanta, Ga. Director, Harry Phillips, 46 Courtland Street, S. E., Atlanta 3, Ga.

Oct. 15-18—**Kansas Fire School.** Annual meeting, University of Kansas, Lawrence, Kans. Director, Clyde A. Babb, 111 Fraser Hall, University of Kansas, Lawrence, Kans.

Oct. 23-25—**Illinois Firemen's Association.** Annual meeting, Springfield, Ill. Secretary, Roy W. Alsip, Box 8, Champaign, Ill.

Oct. 24-26 (tentative) — **Arizona State Fire Training School.** Annual meeting, Phoenix, Ariz. Director, Battalion Chief Jake Siken, Fire Fighting Instruction Supervisor, 49 South 1st Street, Phoenix, Ariz.

Nov. 12-16—**International Association of Fire Chiefs.** Annual meeting, Miami, Fla. Secretary-Manager, B. Richter Townsend, Hotel Martinique, Broadway at 32nd Street, New York 1, N. Y.

MANUFACTURERS' NEWS

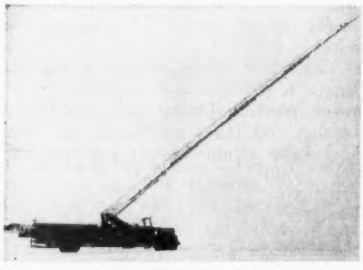
Continued from page 343

has now been changed, introducing body styles which are radically different from those produced between the late thirties and 1955.

The C. D. Beck & Company, Inc., present operators of the Ahrens-Fox fire apparatus business, was founded in Sidney, Ohio, in 1932, and since that time has continually produced intercity type buses.

The same engineers who designed today's modern intercity coaches and deck-and-half coaches which the C. D. Beck & Company, Inc. manufactures, also engineered the new Ahrens-Fox unit. Their experience with heavy duty body construction and remote controls necessary for the proper operation of a cab forward fire truck, combined with the experience that Ahrens-Fox had gained through over 100 years of fire equipment building, resulted in the development of the new Ahrens-Fox pumper.

Ward LaFrance Introduces New Aerial Ladder



A new aerial ladder, incorporating modern construction, control and operating features, has been introduced by the Ward LaFrance Truck Corporation of Elmira, N. Y. The all-steel hydraulic unit is available in four-wheel or tractor-drawn models.

Powered by a 250 hp engine, the aerial goes into action fast. The ladder is comprised of telescopic sections which generously overlap when extended for greater stability. Rubber-covered rungs insure safe footing, while specially-engineered handrails add strength and practicality.

The ladder on the new Ward LaFrance aerial is offered in 65-foot, 75-foot or 85-foot lengths. Ground ladders in a wide range of sizes are supplied as standard equipment.

Continued on page 354

For VALUE . . .

Specify HALE

Why do users of Hale Fire Pumps specify "Hale Pump" when they buy new apparatus?

Because these men have learned through practical experience HALE VALUE in terms of:

• **Dependability** • **Flexible Performance** • **Efficiency**

For 41 years Hale-equipped Fire Pumpers have upheld a high standard of dependability . . . a dependability that has won the respect of users all over the world. **Hale Fire Pumps are sold only through Manufacturers of Quality Apparatus.**

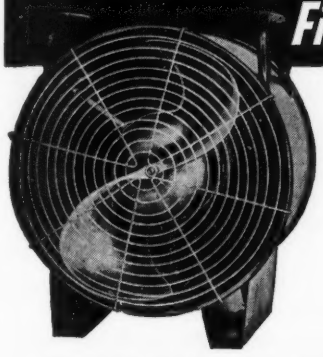
FEATURES

- **Completely Modern**
- **Reliable**
- **Rugged**
- **Compact**
- **Conservatively Rated**

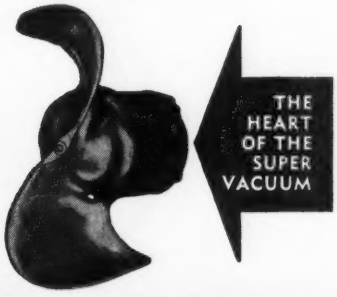
Write today for NEW FOLDERS on Hale Fire Pumps . . . built in all standard capacities.

HALE
FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

Revolutionary New Principle Increases Fire-Fighting Efficiency!



● The Super Vacuum Smoke ejector is a powerful portable fan unit designed especially for fire departments. This design is a new and revolutionary principle in moving air. Several thousand Super Vacuum Smoke ejectors are in use throughout the United States and Canada. Controlled ventilation is new and very necessary in fire fighting. Years of service and satisfied users are your best guarantee for any merchandise.



● The secret of Super Vacuum is the patented fan blade. Conventional fans chop the air and push it back. Whereas the Super Vacuum fan blade is a perfect spiral air screw which creates a partial vacuum, suction is created over the entire face of the blade and the air or smoke is discharged in a high velocity spiral. There are no dead spots—that is why Super Vacuum outperforms other fans twice its size.

Write for Additional Information or Contact Your Local Fire Equipment Dealer

MANUFACTURED EXCLUSIVELY BY

Super Vacuum MANUFACTURING CO., Inc.

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Eastman No. 10 STANDPIPE TURRET

A small, highly efficient and inexpensive fire fighting deluge gun for permanent mounting. One man can easily direct the streams of three of these guns at one time, locking them into position at will.

The Model 10 Gun is excellent for use on standpipe locations in lumberyards, oil refineries, factories, or any location which has a localized fire hazard.

May be rotated at any angle and locked in position at will

Send for Bulletin 1-56

SAMUEL EASTMAN CO., INC.

CONCORD, NEW HAMPSHIRE

Continued from page 353

New Wetting Agent

A new anionic surface active agent, known as Isomal 265, has been developed that can be used as an effective fire fighting fluid in solution with water. It has effective wetting and penetrating characteristics.

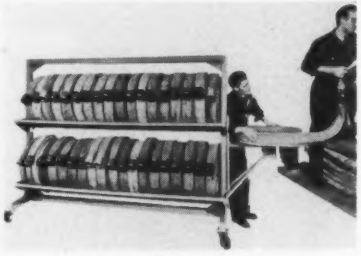
The new fluid, developed by The Johnson-March Corporation, Philadelphia, is a concentrated sulfonated ester type liquid with novel chemical properties.

This surface active agent, when added to water, is much more effective than plain water for fire fighting, even in extremely dilute solutions. It is recommended for use with water in a ratio of 1 to 750 or 1,000.

According to the manufacturer, Isomal offers significant advantages in suburban or rural areas where only limited amounts of water may be available for fire fighting purposes. In plants and public buildings, it can also be used to increase the fire fighting potential of ordinary water. Further, high operating efficiency is obtained from a unique balance of lipophilic and hydrophilic elements. The solution is compatible with both nonionic and other anionic agents. It is stable at elevated temperatures (up to 210 degrees F), and has no upper or lower cloud point.

New Hose Storage Racks

Circul-Air Corporation of Detroit, originators of electric fire hose dryers and washers, has announced two additions to their line of hose-conditioning equipment. Both of these items are hose storage racks.



One of them, called the "Porto-Rak" is a mobile rack unit mounted on locking casters so that it may be moved from storage position and anchored in place at the fire truck for a complete hose reload or at the dryer. It is equipped with a detachable turntable to facilitate the reloading of the apparatus. With the table detached, the rack can then be stored in small space; it is eight feet long. It holds at least 1800 feet of 2½-inch hose or proportionately more of 1½-inch hose. It is made of heavy gauge square steel tubing finished in Hammerox gray.

The other rack is of the built-in type, designed primarily for new fire stations and provides flush mounted cupboards as seen in the accompanying photo. It utilizes the removable trays from the hose dryer and stores hose in the same

loosened position as when placed in the dryer.

It is available in standard, two-section or three-section units, or in any increment of ten shelves per tier. Longer or higher racks are available on special order, custom-built to suit the need of any department.

Literature on these racks, on dryers and hose washers, is available upon request to: The Circul-Air Corporation, 575 E. Milwaukee Ave., Detroit 2, Mich.

New Fiberglass Telescoping "Hot Stick"

Utility line repair men have a safer, easier job today, thanks to a new telescoping, fiberglass "hot stick," known as "Extendo" adapted from a fishing pole by Orchard Industries, Inc., Hastings, Mich. The new tool makes it unnecessary for the line man to climb utility poles to perform many high-danger jobs. Completely non-conductive, the pole is also finding wide use with the fire and police departments for emergency handling of live wires.

The device telescopes from a 4½-foot length to 28 feet and weighs less than seven pounds. Hooks, wrenches, saws, brushes and other specialized tools and accessories clamp into its business end.

Little Heads Eastman

John P. Little, for the past three years Vice-President and General Manager of Samuel Eastman Co., Inc. of Concord, N. H., has become President of the company. He succeeds George Robinson who headed the organization for many years.

John P. Little

Dean Mattice, who has served as Assistant Treasurer for the past five years, has been named Treasurer.

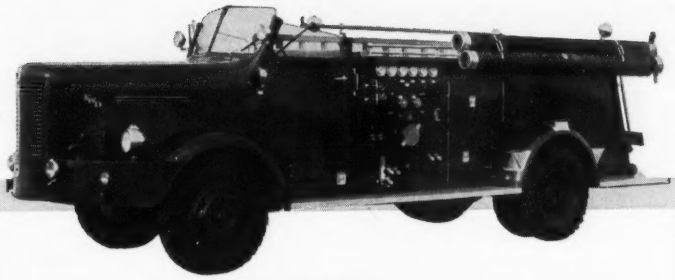
According to Mr. Little, there will be no change in policy, with continued emphasis on quality manufacture. He says that the plant, now employing 65 people, is working at full capacity and has a substantial backlog of orders.

Dean Mattice

Starting in 1824 as a maker of riveted leather fire hose, the Eastman Co. is the oldest fire equipment organization still in business. For the past sixty years it has been one of the country's leading manufacturers of deluge, ladder and play pipes for both municipal and industrial fire departments. As one of its recent innovations, the company now has a fully-equipped demonstration truck touring the country, showing its fire stream equipment in actual use with a special display for conventions, fire schools and individual fire departments.

New Facts on Leonard Rotary Gear Pump

Specific construction and other features of the improved Leonard Rotary Gear Pump, important to fire chiefs, safety engineers and others, are described and illustrated in a new handsome two-color four-page booklet offered free by the American Fire Equipment Co., 717 Boylston St., Boston 16, Mass.



Now! GARRISON Power Steering for FWD Fire Trucks!

Gives operator maximum steering control–Garrison Power Steering eases handling and control of heavy fire trucks–vital factors in maneuvering through crowded streets and in and out of close quarters. Hydraulic power does 80% of the work of turning the wheels. Only slight pressure on the steering wheel gives the operator complete control.

That's why FWD offers Garrison Power Steering equipment as a factory-installed option or in kit form on all FWD Fire Trucks. Why not get it on your next piece of FWD fire-fighting apparatus?

POWER STEERING KITS FOR OTHER TYPES OF EQUIPMENT

Garrison Power Steering is available as optional equipment, or in kit form, for many other makes and models of wheeled equipment, including trucks, tractors, and off-the-road equipment. Write for further information.

GARRISON Manufacturing Co.

1500 South Santa Fe Avenue
Los Angeles 21, California

McINTIRE GATE VALVES

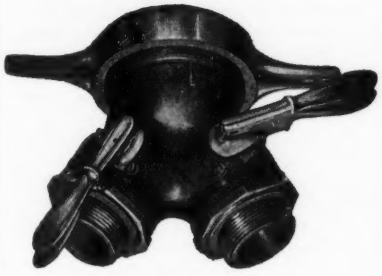


Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

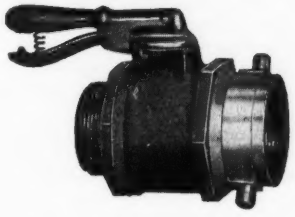


Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

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Write for latest catalog and price list.

Dealer inquiries invited.

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216 East 45th Street

New York 17, New York

the round table

discussion of current fire department and fire management problems

Closed or Open Fire Apparatus

THIS IS THE FOURTH installment of the Round Table on closed vs. open fire apparatus.

The generous response from our readers makes it necessary to carry the discussion over to this issue and to the May issue as well. The editors will welcome any additional comments on the subject. Address replies to Round Table Editor, FIRE ENGINEERING, 305 East 45th Street, New York 17, N. Y.

Discussion of the Subject

E. P. Feaster, Chief, Lincoln, Neb.: Our records indicate that the accident rate resulting in injury to personnel when all members of the company are riding in an enclosed cab is less than with equipment which provides cab for officer and driver only.

Injuries are usually greater when members ride the side running board or rear step, due to the fact that they are thrown from their perch by impact in case of a collision.

Our records show that exposure to the cold in severe weather which has made it necessary in the past for members to miss time from duty due to frozen faces, hands and body on long country runs, does not exist when apparatus with cabs are provided.

Closed cabs and open cabs have about the same accident frequency.

We have found operational difficulties a little greater in fully enclosed cabs, cab-over-engine and other types, especially in backing apparatus, spotting hydrants, accidents to members in picking up hose, due to poor visibility.

Edward J. Blohm, Chief, Detroit, Mich.: All Detroit closed apparatus provides cabs for drivers, officers and all men assigned.

The many serious accidents we have had since 1935, when we first purchased enclosed apparatus, prove the great advantage of members riding inside cabs as opposed to riding on running boards or rear steps.

Respiratory and relating sicknesses have been materially reduced since enclosed apparatus became standard equipment.

Closed cabs reduce the accident frequency, for the reason that driver's vision is unimpaired; also because the possibility of damage to vision from the hazards of dust, snow, cold, wind and rain are eliminated.

Since 1935, with one exception in 1948 when one fireman was fatally injured in an automobile-type squad car and a police scout car accident, no deaths have resulted to firemen in accidents, and on many occasions the enclosed cabs were directly responsible for this saving of life.

Gerald C. Robertson, Chief, Blue Hill, Me.: We are a small department in a small town and we have to take care of a large rural district, so we use closed cabs.

Since this department was formed in 1928 we have never had an accident due to closed cabs or any other type of accident. In the winter we have temperatures as low as 40 degrees below zero, and closed cabs are the thing for this type of weather.

H. E. Kinley, Chief, Williamsport, Pa.: As we are a city department and have short runs, we have open cabs with windshields. We do not have a high sick leave frequency.

We have been fortunate in having only one accident in the past 15 years that resulted in personal injury to firemen. They were both riding the seat. We have a very strictly enforced rule prohibiting men riding the side running boards.

One third of our apparatus is cab-ahead of engine. While visibility to the front is improved, we have noticed a

THIS MONTH'S QUESTIONS

What do your records show regarding accidents and resultant injuries to personnel on fire department apparatus equipped with (a) enclosed cab for chauffeurs and members as against (b) enclosed cab for chauffer and officer only?

Is personnel injury frequency greater when members ride the side running board or rear step (than when inside cab or body of apparatus)?

Have you noticed any difference in sick leaves between men who ride open apparatus and those who ride units provided with cabs?

How do closed cab apparatus compare with open apparatus from the standpoint of accident frequency?

Have you noticed any difference in (a) accidents and (b) operational difficulties such as visibility, spotting, etc., between cab-over-engine and other types?

Avoid training injuries by eliminating outdated methods of generating smoke for smoke drills and testing equipment.

The SUPERIOR GRAY SMOKE utilizes a new and revolutionary method of generating smoke, which is SAFE ANYWHERE. It has the following EXCLUSIVE properties:

NON-TOXIC
LEAVES NO RESIDUE
CONTAINS NO EXPLOSIVES
(may be shipped by mail)

The Superior Gray Smoke Bomb (illustrated) burns for 2-3 minutes generating 5-6,000 cubic feet of smoke.
$7.30 per dozen

The Superior Five Minute Smoke Bombs burns for five minutes generating 15,000 feet of gray smoke.
$2.00 each

The Superior Smoke Grenade burns for 3 minutes generating a terrific 20,000 cubic feet of smoke. Has built in pull wire ignitor. Unconditionally guaranteed for FIVE YEARS.
$3.00 each

All Superior products are guaranteed. Prices are f.o.b. factory.

Order from your regular fire equipment dealer or write to:

SUPERIOR SIGNAL COMPANY, INC.
P. O. Box 349 South River, N. J.

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For the Modern Fire Fighter . . .

Recognized by the Fire Service as Standard

Promotional Study Course for Firemen—$3.00
Fire Chief's Handbook—$4.00
Fire Service Hydraulics—$3.00
Fire Service Ladders—$2.00
Fire Service Rescue Manual—$1.25

(The Above Prices Are All Postpaid)

Book Department
FIRE ENGINEERING
305 East 45th Street
New York 17, N. Y.

tendency on the part of drivers accustomed to conventional trucks, to cut the corners too soon, causing an increase in minor accidents with damage to the rear fenders resulting. We find that it is more difficult to spot a pumper at the hydrant with the cab-ahead-of-engine design, but this has been overcome with increased practice in this evolution. The cab-ahead design with its shorter wheelbase, of course, permits the apparatus to make turns without backing in many cases.

Leonard Leigh, Chief, Toronto, Ont.: Our records show more accidents with chauffeur and officer cars than with the enclosed cab design apparatus.

Personnel injury frequency is also greater when members ride the side running board or rear step than when they ride inside a cab. We find less sickness with the closed cab.

Closed cabs are also much better than open apparatus from the standpoint of accident frequency.

We have found less accidents and better visibility, spotting, etc., with the cab-over-engine type of apparatus.

W. J. Lewis, Chief, Norfolk, Va.: All our apparatus is of the five or seven-man open rear cab type.

We have found less accidents when the men ride in the cab than when they ride the running boards or rear step. Our accident rate is very low, however.

When we first changed to this type of apparatus, there was a slight increase in accidents. However, as the operator became accustomed to the car, the accident rate became lower.

J. H. Freeman, Chief, Tucson, Ariz.: All equipment is semi-cab for officer and driver only.

We have no figures on accident frequency. No men ride the side of engines, but they do ride the side of the aerial ladder truck.

As we have mild climate, there has been no difference in sick leaves between men who ride in open or closed cabs.

We have noticed no difference in accident frequency with the cab-over-engine apparatus than with other types, but the former offers better visibility.

Clyde Wray, Chief, Royal Oak, Mich.: We have had no accidents with either the closed or open apparatus, nor have we noticed any difference between the two insofar as sick leaves are concerned.

Thomas J. Phelan, Chief, Trenton, N. J.: We believe injury frequency is higher when members ride the side running board or rear step then when they ride inside the cab. We have no serious accidents with either type of apparatus.

We feel there is less danger of members contracting colds, etc., when wet and tired if they ride in the cab upon return from working fires.

E. W. Heller, Chief, Ann Arbor, Mich.: We have had no accidents since we purchased closed cabs for all. We also feel there is somewhat less incidence of sickness with the closed cab.

"I recommend BI-KLEEN for the FIRE HOUSE as well as FIRE HOSE!"

For cleaner, longer-lasting fire hose

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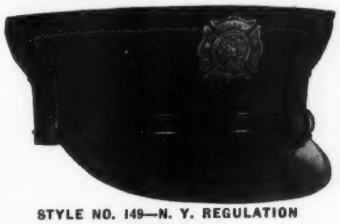

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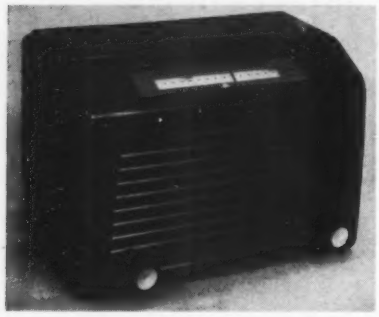

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short cuts and gadgets

Makes Splicing Easier

Every fire department relies on rope for numerous operations. Many splice eyes in it, or splice lengths together. And at best, splicing is tough on the fingers.

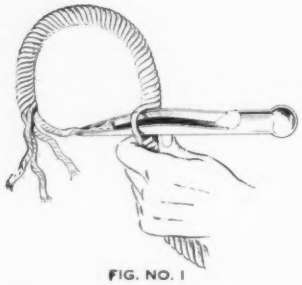


FIG. NO. I

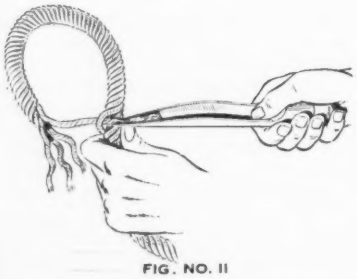


FIG. NO. II

Carl Payne, Assistant Chief of the Modesto, Calif. Fire Department, not content with the customary marlinspike and other splicing tools, for repairing safety nets at the training tower, etc., has designed a special gadget for rope-splicing. For particulars drop Chief Payne a line at 541 Ramona Ave., Modesta, Calif.

Tacoma's Hydrant Finders

Fire departments in cities fortunate enough to have water supply systems and hydrants are supposed to know, first of all, where the hydrants they may want to use in an operation are located. But, although members of an engine company, for example, may be able to spot any hydrant in their district without trouble, even in the dark, crews of out-of-district outfits quite possibly may not be so fortunate.

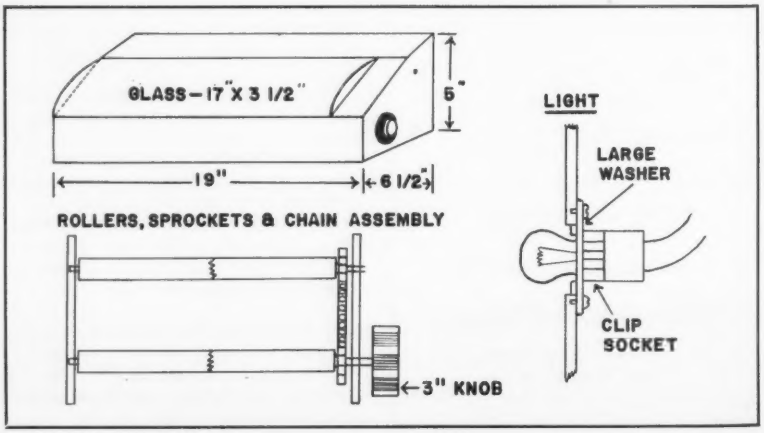
All this has given rise to various expedients to take the fire hydrant out of the *"button, button who has got the button"* class.

Latest, and one of the really worthwhile solutions, comes to us from Lieut. C. R. Duppenthaler of the Tacoma, Wash., Fire Department. Here is the way he tells it:

"The fire department in the City of Tacoma has had hydrant finders on the greater part of the engine companies for years. The only trouble was that each company had only its own district. Thus if on a multiple alarm fire and the outlying companies moving in to take station at the downtown companies and running as such, they had no way of knowing the location of the hydrants in that district. During the daylight hours it wouldn't be so bad as we have a very good hydrant coverage, but after dark it was more of a groping operation.

"Feeling the need for a hydrant finder that would work universally on all engine companies of the city, we decided that a map of the entire city would work best. This could be cut in half and when the ends were fastened together it would form a long strip. This could be placed on two rollers that had sprockets at one end and were connected by chain. Thus, by turning one you could bring any desired section of the city into view.

"Upon finding the size map we desired we found that in order to be blueprinted or duplicated it had to be on oiled silk cloth. The next step was to trace the entire map onto the oil silk cloth using india ink. After that task was completed we then placed the hydrant locations on the map. This was a long and arduous



job as care had to be taken that the locations were on the exact corner. After each section was completed, they were double checked. When the proof was finally ready we had it duplicated onto other oil silk cloth for use in the hydrant finders (carried on the apparatus).

On the left edge we put the street numbers corresponding to the numbered streets. The numbers of the cross-streets that are name streets, starting at 100 up to 8300, were listed at the bottom. Thus any number or address can be checked and located in a very short time.

We then built the box. The front was on a slant with an opening that we fitted with a magnifying glass. In the rear of the box we inserted a light that would illuminate the exposed portion of the map. The glass is 17 inches long with a curved surface on the upper side. It is similar to those used on butcher scales.

This work was done by Lt. C. R. Duppenthaler and Firemen C. C. Jensen and Ralph Pearsall with the able assistance of Battalion Chief C. A. Potter, who procured the supplies and material."

The accompanying sketches illustrate the idea. Help yourself to it!

Obituaries

First Ventura County Fire Chief

Walter F. Emerick Sr., 76, first Ventura County, Calif., Fire Chief, died February 12 in Los Angeles.

Emerick was assistant supervisor of the old Santa Barbara National Forest when he left in 1927 to become Game and Fire Warden in Ventura County.

Chief Emerick was named to head the Ventura County Fire Department when it was formally organized the following year. He held the post until he retired in 1936.—*Paul C. Ditzel*

Michael Keefe, Dry Chemical Specialist

The death of Michael E. Keefe, Jr., senior partner of Keefe and Company Atlanta, Ga., occurred in February, 1956. Mr. Keefe is said to have originated and developed dry chemical fixed extinguishing systems in use throughout the south in textile mills and cotton gins.

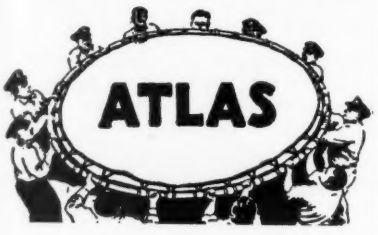
C. T. Bissell

Clinton T. Bissell, a retired engineer of the National Board of Fire Underwriters, died February 14 at Mountainside Hospital, Montclair, N. J., after a long illness. He was 82 years of age. He lived at 58 Cambridge Road, Montclair.

Mr. Bissell was with the National Board 43 years. He was engineer in charge of building codes for 24 years before retiring in 1951.

He was born in Manchester, Conn., and attended schools there and was grad-

always SPECIFY



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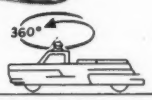

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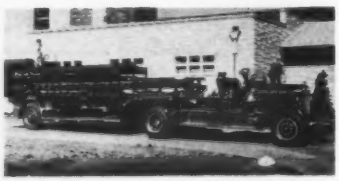

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uated in civil engineering from Yale University in 1897.

Mr. Bissell began his career with the National Board of Fire Underwriters in 1909, working under the supervision of The Committee on Fire Prevention. His duties included the investigation of and report on structural conditions and the conflagration hazard in cities of the country.

Former Chief J. J. Armstrong

John J. Armstrong, 70, former chief of the East Hartford, Conn., Fire Department, and a fireman in that town for 46 years, died on February 9 following a long illness.

One of East Hartford's first paid firemen, Mr. Armstrong became chief of the department in 1945, and served until his retirement in 1949. When he joined the department at the age of 19, the most reliable piece of fire fighting equipment was a two-wheel, hand-drawn gig. He was the driver of the department's first motorized vehicle.

Tom Magner

February Fire Losses

Estimated fire losses in the United States during February amounted to $84,041,000, the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $84,041,000 loss represents a decrease of 1.2 per cent from losses of $85,046,000 reported for February, 1955, and a decrease of 13.3 per cent from losses of $96,972,000 for January.

These estimated losses include an allowance for uninsured and unreported losses.

New Station for Fairfield

Dedication of the new fire station of the Fairfield Center Volunteer Fire Company at Fairfield, Conn., took place on October 23 at ceremonies attended by more than 150 persons in the building's meeting room.

The fire station is located on the former American Legion field site, two blocks from the frame building that was its predecessor.

First Selectman Dimill L. Kinnie turned the new building over to L. A. Renzulli, chairman of the Fire Commission, in a ceremony which also included Frank W. Parks, Commissioner of the Center Station Company.

Constructed at a cost of $165,000, the new station was paid from a balance left in the Town Employees' pension fund when town employees voted to abolish the fund in favor of Social Security.

Chairman Renzutti was master of ceremonies, and the speakers included Fire Chief Thomas J. Carroll and Charles J. McClinch, Sr., former Fire Commission chairman, under whose reign plans for the new structure were first formulated.

Tom Magner

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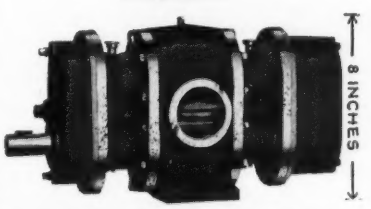

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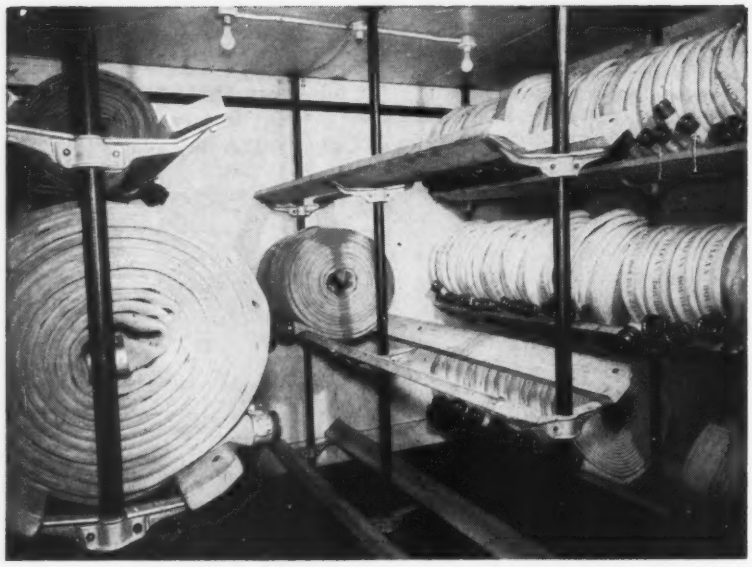

Photo Courtesy Wichita Fire Station No. 1

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FEATURES

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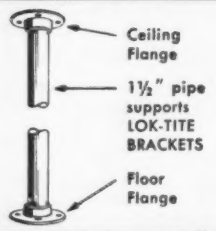
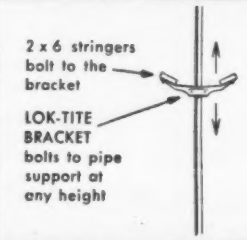
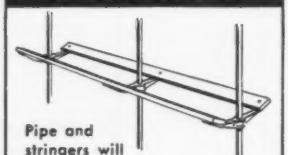


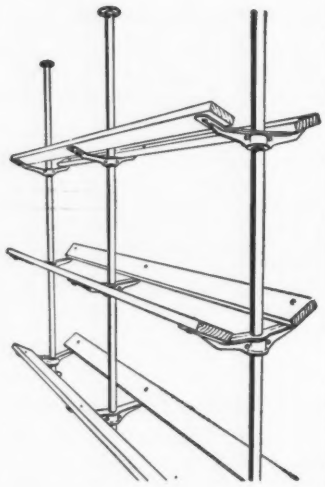
EASY ADJUSTMENT



BIG LOAD SUPPORT



Build Your Own Racks With Lok-Tite Brackets



MIGHTY few station houses have all the room they need for good housekeeping. Lok-Tite brackets help solve the hose storage problem by allowing ample ventilation and access in limited storage space.

Build your own racks with new or used materials. Design your own storage to take full advantage of the space available. Have ample room for fittings inspection and ventilation.

Lok-Tite brackets, light weight aluminum alloy, designed for strength and easy installation.

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APRIL, 1956

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